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STEBBINS, ROBERT C.

1950

1- July - September 1950
Miscellaneous
Catalogue nos. 4810-4814

2- October - December 1950
Colombia, South America
Catalogue nos. 4815-5184
Journal
Species Accounts
Birds
Mammals
Amphibians
Reptiles

STEBBINS, ROBERT C.

July - September 1950

Miscellaneous

Catalogue nos. 4810-4814

cut page #1866

Catalogue

Stebbins, R.
1950

Catalogue

Yosemite Valley, Mariposa Co., Calif.
July 29, 1950

4810 Eumeces

Accn. 8285

John A. Jones Ranch, 5000 ft., Parker Canyon,
Santa Cruz Co., Ariz.
Aug. 1950

4811 Ambystoma tigrinum
48 larvae received Aug. 28, 1950 from
Charles A. Reed.

1814 Delaware St., Berkeley, Alameda Co., Calif.
Sept. 3, 1950

♂ 4812 Ancides lugubris } with eggs.
♀ 4813 " " }

El Cerrito, 7318 Gladys Ave., ~~Alameda~~ Contra Costa Co., Calif.
Sept. 3, 1950

4814 Ancides lugubris eggs — { Received from Roy Elliot, Sept. 11, 1950

cat page [illegible] 2.

Stebbins, Robert C
October-December 1950
Colombia, South America

Catalogue nos. 4815-5184
Journal
Species Accounts
Birds
Mammals
Amphibians
Reptiles

cat page #1868

Cataloque

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1950

Catalogue

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15, 1950

4815	Oedipus	adspersus
4816	"	"
4817	"	"
4818	"	"
4819	"	"
4820	"	"
4821	"	"
4822	"	"
4823	"	"
4824	"	"
4825	"	"
4826	"	"
4827	"	"
4828	"	"
4829	"	"
4830	"	"
4831	"	"
4832	"	"
4833	Phyllobates	subpunctatus
4834	"	"
4835	"	"
4836	"	"
4837	"	"
4838	"	"
4839	"	"
4840	"	"

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1950

Catalogue

Bogotá, 8700 ft., Cundinamarca, Colombia
Oct. 15, 1950

4841 Phyllobates subpunctatus
4842 " "
4843 " "
4844 " "
4845 " "
4846 " " eggs. - 4 separate clutches
4847 " " " RH 3. } adults toe clipped
4848 " " " RH 2 }
4849 " " adult
4850 " " larvae (on back of 4849)
4851 " " adult
4852 " " larvae (on back of 4851)
4853 " " adult + larvae (from back)
4854 tadpoles

Villavieja, 1400 ft., Huila, Colombia
Oct. 18, 1950

~~ad.~~ ♂ 4855 Crotophaga sulcirostris ~~ani~~ - 59.5 gms.
ad. ♀ 4856 Coryphospingus pileatus . 16.5 gms.; skull double layered.
ad? ♂ 4857 Tyrannus melancholicus 43.5 gms; skull double layered potentially; not checked autoridly.
~~ad. ♂ 4858 Sporophila minuta - 7.5 gms.~~

Cerbatana, 5 Km. N Villavieja, 1400 ft., Huila, Colombia
Oct. 19, 1950

ad. ♂ 4858 Sporophila minuta . 7.5 gms.; skull double layered.

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1950

Catalogue

Cerbatana, 5 km. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20, 1950

ad. ♂	4859	*Sporophila minuta*	- 7.5 gms.
♂	4860	*Forpus conspicillatus*	- 24.5 gms.
♀	4861	*Columbigallina passerina*	- 28.7 gms.
ad. ♀	4862	*Tyrannus melancholicus*	- 47. gms
ad. ♂	4863	" "	- 39. gms.
♀	4864	*Columbigallina passerina*	- 23.8 gms.
♂	4865	*Forpus conspicillatus*	- 26.5 gms.

Oct. 21, 1950

♂	4866	*Columbigallina passerina*	- 31.5 gms.
♀	4867	*Forpus conspicillatus*	- 21.8 gms.
♂	4868	" "	- 26.5 gms.
ad. ♂	4869	*Sporophila minuta*	- 6.9 gms.
ad. ♀	4870	" "	- 7.3 gms.

Villavieja, 1400 ft., Huila, Colombia

Oct. 18, 1950

4871	*Bufo* [illegible]
4872	"
4873	"
4874	"

Cerbatana, 5 km. N Villavieja, Huila, Colombia

Oct. 19, 1950

4875	[illegible]
4876	"

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1950

Catalogue

Cerbatana, 5 km. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19, 1950

4877 Leptodactylus minuta
4878 Hyla crepitans
4879 " "

Oct. 20, 1950

4880 Bufo granulosus
4881 " "
4882 " "
4883 Leptodactylus minuta
4884 Hyla crepitans } together
4885 " "
4886 " "

Oct. 22, 1950

ad. ♀ 4887 Tyrannus melancholicus - 38.7 gms.
ad. ♂ 4888 " " - 39.0 gms.
ad. ♂ 4889 Forpus conspicillatus - 23.8 gms.
im.? ♂ 4890 Synallaxis albescens - 15.8 gms.
ad. ♀ 4891 Hylophilus flavipes - 11.4 gms.
ad. ♂ 4892 " " - 12.6 gms.
ad ♂? 4893 Jay - - 199.0 gms.
♀ 4894 Hyla crepitans
♂ 4895 " "
4896 Ameiva ameiva
4897 Gonatodes
4898 "

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1950

Catalogue

Cerbatana, 5 Kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 22, 1950

4899 Cnemidophorus lemniscatus

Oct. 23, 1950

4900 Cnemidophorus lemniscatus
4901 " "
4902 Iguana iguana
ad. ♂ 4903 Sporophila minuta - 7.5 gms.
ad. ♂ 4904 Coryphospingus pileatus - 15.5 gms.
4905 Cnemidophorus lemniscatus
4906 " "
4907 " "
4908 Gonatodes "Julianita"

Oct. 24, 1950

ad. ♂ 4909 Hylophilus flavipes - 10.9 gms.
♂ 4910 Stelgidopteryx ruficollis - 13.4 gms. (one testis lost).
♂ 4911 " " - 15.8 gms. ②
♀ 4912 Columbigallina passerina - 28.8 gms.
♂ 4913 Colinus cristatus - 151 gms.
♂ 4914 Crotophaga sulcirostris - only testes saved
♂ 4915 - 34.5 gms. (skin prepared by J. Hardisten)

Stubbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 25, 1950

4915 *Cnemidophorus lemniscatus*
4916 " "
4917 " "

} These specimens were collected one or two days earlier by Paulino.

Oct. 26, 1950

ad. ♂ 4918 *Crotophaga sulcirostris* – 59.7 gms. – 4 X 3.5 + 4.5 X 3 mm. skull double layered.
ad. ♀ 4919 " " – 66.4 gms. –
ad. ♂ 4920 " " – 78.0 gms. – 5 X 4 + 7 X 4.5 mm.
ad. ♂ 4921 *Columbigallina passerina* – 29.5 gms. – 8.0 X 3.5 mm.
ad. ♀ 4922 *Tyrannus melancholicus* – 44.0 gms.

Oct. 27, 1950

♂ 4923 *Crotophaga ani* – 107.5 gms. – 5 X 2.2 mm.
♂ 4924 " " – 90.6 gms. – 3.5 X 1.5 mm.
♂ 4925 " " – 95.3 gms. – 3.5 X 1.5 mm.
♂ 4926 " " – 91.0 gms. – 3.0 X 1.5 mm.

} skull double layered

ad. ♂ 4927 *Coryphospingus pileatus* – 14.5 gms. – 6.7 X 5.5 mm.
ad. ♂ 4928 *Sporophila minuta* – 7.3 gms. – 6.0 X 4.5 mm.

Oct. 28, 1950

ad. ♂ 4929 *Sporophila minuta* – 7.2 gms. – 5.5 X 5 mm.
♂ 4930 *Synallaxis albescens* – 16.6 gms. – 6.0 X 4.5 mm.
♀? 4931 *Crotophaga ani* – 99.5 gms. –
♂ 4932 *Colinus cristatus* – 139. gms. – 4.0 X 8.0 mm.
ad. ♂ 4933 *Tyrannus melancholicus* – 38.5 gms. – 11 X 5.5 mm.
♂ 4934 *Columbigallina passerina* – 28.0 gms. – 7. X 3 mm.

Stebbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 28, 1950

♀ 4935 *Columbigallina passerina* - 31.5 gms.

Oct. 29, 1950

ad. ♂ 4936	*Coryphospingus pileatus*	- 15.5 gms.	skull double layered.	
ad. ♂ 4937	" "	- "	" " "	
♂ 4938	*Synallaxis albescens*	- 16.5 gms.	- 3 x 4 mm.	
♂ 4939	" "	- 16.5 gms.	—	
ad. ♂ 4940		- 92.0 gms.	skull double layered 2 x 1.5 mm.	

Oct. 30, 1950

♂ 4941 [= ♂ testis sectioned - arm.	*Synallaxis albescens*	- 18.3 gms.	- 4.5 x 6.5 mm.	
ad. ♀? 4942	*Hylophilus flavipes*	- 13.6 gms.	- skull double layered.	(2)
ad. ♀ 4943	" "	- 13.6 gms.	- "	(1)
ad. ♂ 4944	" "	- 11.7 gms.	- "	(1)
ad. ♀ 4945	*Sporophila minuta*	- 8.7 gms.	- "	
ad. ♀ 4946	Kingfisher	- 26.0 gms.	- "	

Nov. 1, 1950

ad. ♂ 4947	*Colinus cristatus*	- 137.3 gms.	- 8.5 x 5 mm.
♂ 4948	*Synallaxis albescens*	- 17.0 gms.	- 9 x 5 mm. 5 x 5 mm.
ad. ♂ 4949	*Hylophilus flavipes*	- 12.9 gms.	- 4.5 mm.
ad. ♀ 4950	*Colinus cristatus*	- 143 gms.	—
ad. ♀ 4951	*Coryphospingus pileatus*	- 16.5 gms	- Skin not saved!
4952	*Amazona*		

Stebbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 2, 1950

ad. ♀ 4953	*Hylophilus flavipes* – 13.1 gms.; skull double layered.	
4954	*Cnemidophorus lemniscatus*	Immediately preserved; suitable for gonad study.
4955	" "	
4956	" "	
4957	" "	
4958	" "	
4959	" "	
4960	" "	
4961	*Ameiva*	
4962	*Cnemidophorus lemniscatus*	
4963	" "	
4964	" "	
4965	" "	
4966	" "	
4967	" "	
4968	" "	
4969	" "	
4970	" "	
4971	" "	
4972	" "	
4973	*Gonatodes*	

Finka Argentina 10 kms. E Villavieja, Huila, Colombia

Oct. 28, 1950

4974 *Iguana iguana*

Stebbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

~~Nov 2~~

Nov. 2, 1950

4975 *Cnemidophorus lemniscatus*

4976 " "

Oct. 22, 1950

4977 *Leptodactylus labialis*

4978 "

4979 "

4980 "

4981 "

4982 " *menkei*

Villavieja, 1400 ft., Huila, Colombia

Oct. 27, 1950

4983 *Bufo marinus*

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30, 1950

4984 *Iguana iguana*.

3 kms. N Cerbatana near road to San Alfonso from Villavieja, 1400 ft., Huila, Colombia

Oct. 28, 1950

4985 [illegible]

Oct. 29, 1950

4986 [illegible]

Stebbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30, 1950

4987 [illegible]

Nov. 3, 1950

4988 *Ameiva* — [illegible]

4989 *Cnemidophorus lemniscatus*
4990 " "
4991 " "
4992 " "
4993 " "
} Suitable for gonad study

♂ 4994 *Synallaxis albescens* - 17.5 gms. - 5 x 5 mm.

4995 *Cnemidophorus lemniscatus*
4996 " "
} Suitable for gonad study!

Nov. 4, 1950

♀ 4997 *Stelgidopteryx ruficollis* - 14.5 gms.
♂ 4998 - 71-8-16-21-13 18.5 gms.
♀ 4999 - 70-5-12-16-10 14.3 gms.
♀ 5000 - 71-5-12.5-16-11 12.5 gms.
♂ 5001 - 72-4-12.5-16-10 13.5 gms.

~~50~~ Villavieja, 1400 ft., Huila, Colombia

Nov. 5, 1950

♂ 5002 *Iguana iguana*

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 4, 1950

5003 *Cnemidophorus lemniscatus*
5004 " "
5005 " "
} Suitable for gonad study

Stebbins, R.
1950

Catalogue

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

~~Nov 6~~ Nov. 6, 1950

5006 *Bufo*

5007 *Cnemidophorus lemniscatus*

5008 " "

5009 " "

5010 " "

5011 " "

5012 *Gonatodes*

5013 "

5014 "

5015 "

5016 "

5017 "

5018 "

5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 4, 1950

5019 *Leptodeira*?

Nov. 7, 1950

5020 *Oxybelis*

Nov. 6, 1950

5021 *Microhyla*

5022 *Leptodactylus ocellatus*

5023 " *mystacinus*

5024 *Bufo granulosus*

~~5025 Cnemidoph~~

Stebbins, R.
1950

Catalogue

5 kms. N Villavieja, 1400 ft., Huila, Colombia
Nov. 7, 1950

5025 Cnemidophorus lemniscatus
5026 " "
5027 " "

Villavieja, 1400 ft., Huila, Colombia
Nov. 8, 1950

5028 Tadpoles
5029 Bufo
5030 Hyla crepitans
5031 Rana palmipes Leptodactylus [illegible]
5032 Bufo granulosus
5033 " "
♀ 5034 Gonatodes
♂ 5035 "
5036 "
5037 "
Nov. 9, 1950
5038 Cnemidophorus lemniscatus
5039 " "
5040 Thecadactylus rapicaudus
5041 Hyla microcephala
5042 "
5043 "
5044 " crepitans
5045 Gonatodes
5046 Hyla microcephala
5047 " "

Stebbins, R.

1950

Catalogue

Villavieja, 1400 ft., Huila, Colombia

Nov. 9, 1950

5048 Hyla

5049 Elachistocleis ovalis

5050 Leptodactylus mapori

Apiay, 1600 ft., ~~Mc~~ 12 Kms. ~~(by road)~~ SE Villavicencio, Meta, Colombia

Nov. 18, 1950

5051 Lampropelleis

Trinidad, Boyaca, Colombia

Nov. 18, 1950

5052 Cnemidophorus lemniscatus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19, 1950

5053 Mabuya mabuya

5054 Anolis

5055 "

5056 "

~~5057~~ " lost

5058 Hyla crepitans

5059 " "

5060 " "

5061 Rana palmipes

5062 " "

5063 Leptodactylus obscurus

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1950

Catalogue

Villavicencio, 1600 ft., Meta, Colombia
Nov. 19, 1950

5064 Leptodactylus bufonis pleuroscelis
5065 Hyla microcephala
5066 " "
5067 Dendrobates minutus

½ mi. E Buenavista, 4000 ft., Meta, Colombia
Nov. 21, 1950

5068 } See next page ~~egg cluster~~.
5069 }
5070 Hyloxalus granuliventris
5071 " "
5072 " "
5073 " "
5074 ?
5075 " " infoscatus
5076 " "
5077 Phyllobates lemniscatus
5078 Sphaenorhynchus
Dendrobates pumilio
5079 Hyloxalus granuliventris
5080 "
5081 "
5082 "
5083 "
5084 "
5085 "
5086 "

Found along small canal described under Dendrobates pumilio

Collected by Carlos Velasquez.

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1950

Journal Catalogue

Buenavista, 4000 ft., Meta, Colombia
Nov. 21, 1950

5087	Hyloxalus granuliventris	Collected by Carlos Velasquez
5088	" "	
5089	Leptodactylus xanthomerus	
5090	" "	
5091	" "	
5092	Hyloxalus granuliventris	Taken in vicinity of Buenavista ranch house. (south)
5093	Leptodactylus [illegible]	
5094	" "	
5095	Hyloxalus granuliventris	
5096	Leptodactylus discamus	Vicinity of small reservoir (see notes on Leptodactylus discamus)
5097	" "	
5098	" "	
5099	Hyla pseudopseustes	
5100	" "	
5101	Leptodactylus discamus	Taken in vicinity of Buenavista ranch house (south).
5102	" "	
5103	Bufo nigropunctatus	
5104	Legend	
5105	Leptodactylus	
5106	" "	

½ mi. E Buenavista, 3100 ft., Meta, Colombia
Nov. 21, 1950

5068	Dendrobates punctatus (tadpole)
5069	Sphaerodactylus
5107	Hyloxalus granuliventris

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1950

Catalogue

½ mi. E Buenavista, 3100 ft., Meta, Colombia
Nov. 21, 1950

5108 Leptodactylus [illegible]
5109 Leptodactylid
5110

Villavicencio, 1600 ft., Meta, Colombia
Nov. 19, 1950

5111 Hyla crepitans eggs laid in captivity, Nov. 21, 1950.

Buenavista, 4000 ft., Meta, Colombia
Nov. 21, 1950

5112 Leptodactylus obscurus tadpoles
5113 " ? "
5114 Hyla pseudopuncta "
} Taken at small reservoir.

Apiay, 1600 ft., 12 kms. ~~(Hymed)~~ SE Villavicencio, Meta, Colombia
Nov. 20, 1950

5115 Leptodeira

Villavicencio, 1600 ft., Meta, Colombia
Nov. 22, 1950

♀ 5116 Bufo marinus
5117 " "

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1950

Catalogue

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23, 1950

5118 *Hyla labialis*

5119 " "

5120 Snake

5121 *Cnemidophorus lemniscatus*

5122 " "

5123 " "

5124 " "

5125 " "

5126 " "

5127 *Ameiva*

5128 "

5129 "

5130 "

5131 "

5132 "

5133 "

5134 "

46 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 25, 1950

5135 *Phyllobates vanzolinii*

5136 *Hyla minuta*

5137 Snake

Nov. 30, 1950

5153 *Bufo marinus*

Stebbins, R.

1950

Catalogue

El Mico, 41 kms. S, 22 kms. W, San Martin, 1600 ft., Meta, Colombia

Nov. 25, 1950

5138 Turtle

Nov. 26, 1950

5139 Anole

5140 Bird — skull double layered; testis 2 mm x 1.5 mm.

♂ 5141 " — testis 11 x 6 mm.

Nov. 27, 1950

♀ 5142 Monkey 760 - 415 - 112 - 35 - 21 mm.

El Mico, 41 kms. S, 22 kms. W, San Martin, 1600 ft., Meta, Colombia

Nov. 28, 1950

5143 ~~Chironectes variegatus~~ Centropyx

Nov. 29, 1950

5144 Gecko

5145 Anoles

Nov. 30, 1950

♂ 5146 Bird — testis 2 x 1½ mm.

♂ 5147 " — " 7 x 3½ "

♀ 5148 " ovary 9 x 5 mm.

♂ 5149 Cardinal testis 4.5 x 4 mm.

♂ 5150 Toucan " 5 x 2.5 "

im, ♀ 5151 Jay ovary 11 x 6 mm. (no ova visible).

5152 Bufo marinus

5153 (See after 5137)

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Catalogue

Bogotá, Ciudad Universitaria, Cundinamarca, Colombia

Oct. 24, 1950

~~Oct. 2~~

♂ 5154 Robert

146 - 126 - 32 - 20 (crown)
Received from J. I. Borrero.

46 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Dec. 2, 1950

5155 *Bufo marinus* tadpole
5156 " " recently metamorphosed
5157 Leptodactylid "

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 5, 1950

5158 *Phyllobates subpunctatus* tadpole
5159 " " adults - fixed in Bouins with tads attached.
5160 " "
5161 " "
5162 " " - fixed in Bouins with tads on back.
5163 " " "
5164 *Oedipus adspersus*
5165 " "
5166 " "
5167 " "
5168 " "
5169 " "
} Killed Mar. 28, 1951

5170 *Eleutherodactylus bogotensis*
5171 " "
5172 " "
} Killed Mar. 28, 1951

Stebbins, R.

1950

Catalogue

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 5, 1950

5173	*Eleutherodactylus*	*bogotensis*	Killed Mar. 28, 1951
5174	"	"	
5175	"	"	
5176	"	"	
5177	"	"	
5178	"	"	
5179	"	"	

Bogotá, 8500 ft., Cundinamarca, Colombia

Dec. 5, 1950

~~5180~~	*Hyla*	*labialis*	(decomposed - discarded)
5181	"	"	Killed Mar. 28, 1951.
5182	"	"	

Villavicencio, 1600 ft., Meta, Colombia

Dec. 2, 1950

5183 Snake

Dec. 3, 1950

5184 *Cnemidophorus lemniscatus*

Journal

Stubbins, R.
1950

Journal
Weather Data

Villavieja, 1400 ft., Huila, Colombia

Oct. 18 Hard rain last night, probably 2½"-3". Sprinkled most of morning; sky overcast. Clearing during afternoon; no rain. No wind. Ground thoroughly wet.

Oct. 19 Cerbatana, 1400 ft., Huila, Colombia
Rained much of last night, probably ½-1". Scattered clouds throughout day; no more rain. Ground wet. Air ½" above ground in shade 32.6°C at 2:55 p.m.; 34.0°C at 1:12 p.m.

Oct. 20 No rain last night. Clear all day; few scattered clouds. Ground damp even in late afternoon (in most exposed places).

Oct. 21 No rain last night. At 12:55 p.m. sprinkled lightly for 5 min. No more rain all day. Overcast throughout morning, clearing in afternoon; light gusty wind; distant electrical storms over mountains to E & W. Air temp. 5 ft. above ground in shade, 30°C.

Oct. 21 No rain last night. Sky overcast this morning but not uniform overcast. Broke up about 9:00 a.m. Only few scattered clouds during day. Birds seemed to quiet down earlier this morning. Air temp. 5 ft. above ground in shade at 1:30 p.m., 32°C.

Oct. 22 No rain last night. Similar day to yesterday. Air temp. 32°C at noon.

Oct. 23 Only few scattered clouds to E; rain to W (rainbow) at 6:30 a.m. Air temp. 33.0°C, 1:15 p.m. Ground drying out.

Stebbins, R.
1950

Journal
(Weather Data)

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 23 Scattered high clouds. Breeze just before sunset. No rain.

Oct. 24 Overcast to E this morning; by 9:00 am. sky generally overcast. Looks like rain. Cleared in afternoon - no rain. Air temp. 31°C at 2:30 p.m. This evening sky clear; only few clouds far to E & W over mts. Ground getting pretty well dried out. Sun down before 6:00 p.m.

Oct. 25 Perfectly clear last night but scattered high clouds toward morning. Full moon. High continuous overcast this morning. Chilly this morning - air temp. 23°C at 7:40 a.m. Air temp. 30°C at 12:05 p.m. Full moon; few clouds ~~last~~ early in evening but high clouds about 8:30 p.m.

Oct. 26 Cloudy to W. Rumbling of distant thunder. Rained a few drops about 9:30 a.m. Scattered cumulus now, 12:20 p.m. Air temp 31.5°C at 12:15 p.m. Ground getting well dried out except along quebradas.

Oct. 27 Rain last night; ½ to ¾" of water in aluminum cup used as rain gauge; air temp 12:30 p.m. 29°C; Few scattered clouds this afternoon. Although almost perfectly clear last night, Pauling predicted this rain.

Oct. 28 No rain last night; cloudy this morning, sprinkled lightly; scattered clouds throughout afternoon. Air temp. 29.5°C at 12:05 p.m.

Stebbins, R.
1950

Journal
(Weather Data)

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 29 Rained about ½" last night, according to one tin can rain gauge. Started raining about 4:00 a.m. Rained quite steadily throughout morning until about 10:45 a.m. Air temp. at 12:15 p.m., 25.5°C. Cleared during afternoon. Tonight high thin overcast.

Oct. 30 Began raining about 2:20 a.m. Still raining at 8:25 a.m. Has been steady rain although only occasionally hard. 3/8" of water in rain gauge at 8:25 a.m. Air temp. 26°C at 2:35 p.m. Cleared during afternoon. This evening at 7:25 p.m., perfectly clear. By 9:00 p.m. high overcast developing.

Oct. 31 Rained all morning. Rain gauge checked at 11:45 a.m. (includes rain of last night) - 7/8". Air temp 8:30 a.m. - 21.5°C; 12:00 noon - 27.5°C. Rained most of afternoon, an estimated ¼". Storm broke up at nightfall. Sprinkled lightly during night.

Nov. 1 Clear all day. Only scattered clouds over mountains to E & W. Air temp. at 1:15 p.m. 28.5°C. Sky clear this evening. No rain.

Nov. 2 Scattered clouds in morning; overcast all afternoon. Sun did not appear. Air temp. 31.5°C at 12:25 p.m. No rain.

Nov. 3 Scattered clouds in morning; overcast early in afternoon, breaking later. Air temp. 30°C at 12:00 noon. No rain.

Stebbins, R.
1950

Journal
Weather Data

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 4 No rain last night although it was cloudy. Overcast this morning; sprinkled lightly SW of camp. Vegetation wet along railroad track. Cleared somewhat at midday. Air temp. 30°C at 1:00 p.m. Scattered clouds throughout afternoon. No rain during night.

Nov. 5 Mostly clear today; no continuous overcast; only scattered clouds. Air temp. 30°C at 12:05 p.m.

Nov. 6 Rain last night, beginning at least as early as 2:20 a.m. 1" of water in rain gauge at 12:00 noon today. No rain after about 8:00 a.m. Wind last evening, with electrical storms over mountains to E & W. Windy (gusty & mild) now (12:10 p.m.) – air temp. 27.5°C. Largely clear; only few scattered clouds.

Nov. 7 Rained lightly about 1/2 hr. around 9:00 p.m. last night & again toward morning. No water in rain gauge this morning. Gusty light wind & scattered clouds about 10:00 a.m. Air temp. 28.5°C at 11:00 a.m. Scattered clouds in afternoon.

Nov. 8 No rain last night. We are back at Villavieja. Overcast this morning; clearing in afternoon.

Nov. 9 Hard rain for about 15-20 minutes this morning (about 6:00 a.m.). 31.5°C at 1:05 p.m.; (in court [in shade] ~~in back of~~ near our room). Scattered clouds during afternoon but sun shining & warm.

Stebbins, R.

1950

Journal
Weather Data

Villavieja, 1400 ft, Huila, Colombia

Nov. 10 Rained ~~[illegible]~~ hard toward morning but did not last long. Air 30°c at 11:45 a.m. Few scattered clouds.

Stebbins, R.
1950

Journal

San Francisco, Calif. to New Orleans, La.

Oct. 10 John Hendrickson & I left on American Airlines, flight 10, a DC6 4 engine plane, for Colombia, South America. We travel there by air, a 3 day trip. The first lap of the journey is to Dallas, Texas. We flew non-stop over the San Joaquin Valley, the southern Sierra in the vicinity of Mt. Whitney, Lake Meade, Grand Canyon, Albuquerque, N.M., to Dallas. Clear all the way; visibility good. A few impressions & observations follow: noted vast brown salt (?) beds along E side San Francisco Bay; saw Mt. Hamilton observatory - ought to do some amphibian collecting on Mt. Hamilton sometime; no snow seen in Sierra Nevada; Charlston Mts near Las Vegas must have some amphibians - appeared well forested; after lunch air became a bit bumpy - surface had had time to warm up; saw country above Albuquerque that Wm. Reuter and I visited in 1949 - good forest cover. Arrived at Dallas air-port in late afternoon. After dark, flew to New Orleans. Stars visibl, "scorpio" in S horizon. Light of cities, etc. beautiful. Scattered orange lights that flickered were ~~of~~ burning gas vents near oil well operations. Limousine service to ~~hotel~~ Roosevelt Hotel, where we spent the night ($12.50 - for double with bath). Walked to French section. Saw Jackson square, cathedral, etc.

Stebbins, R.
1950

Journal

New Orleans, La. to Miami, Fla.

Oct. 12 Flew to Atlanta where we stopped 10 min. & then to Miami via Jacksonville, Fla. & along Fla. E coast. At Atlanta airport, saw cracked up Constellation. The landing gear had collapsed; the plane slid in on its belly – no one hurt. Workmen were pasting strips of paper over the name and other insignia that might aid recognition of the plane. The wreck was strategically placed for bad advertisement – right along side the main runway.

Over La. we observed many meandering streams and marvelously branched drainages marked by trees. The drainages appeared dark green, the intervening areas lighter green. Many bayous were seen. Evidence of lateral shifting of meanders could be plainly made out from the air..

We flew too far E to see much of Okefenokee Swamp but the rounded clumps of cypress that occur in wet places were often seen. Over ~~the~~ Fla. were many candy cotton clouds but no extensive overcast. When we were low enough, pines & saw palmetto could be seen. We fringed the E edge of Lake ~~Okeechobee~~ Okeechobee & crossed a section of the everglades. We arrived at the Miami airport about 4:00 p.m. It was warm; rather sultry – slightly overcast. We took a much delayed bus ride to the Columbus Hotel.

Stebbins, R.
1950

Journal

Miami, Fla. to Bogota, Colombia

Oct. 12. Took off in a DC 4 - Avianca Airline flight 667 to Colombia. Caught glimpse of the varied colored water around the first keys. Crossed many miles of very blue water. There were numerous white clouds but no dense cloud cover. Only one boat was seen enroute. We flew over Cuba & Jamaica but did not stop. The Trip to Barranquilla, Colombia required about 5 hrs. All aboard were Latin Americans except a middle aged woman, John & I. We stopped briefly at Barranquilla for gas. We thought we were to have nearly a hour, hence went through inspection (passport & vaccination check) but had no sooner gone through ~~then~~ when we heard the roar of our plane's engines. We dashed back & got on just in time. A weather report may have spurred them on. Barranquilla, on the N Colombia coast, was low, humid, & hot. Much standing water could be seen from the plane as we flew inland.

Flew up the Magdalena Valley. We alternately passed through clouds and clear air, catching glimpses of the meandering, muddy Magdalena River and ~~and~~ numerous flooded areas. As we approached Bogota, we ascended the W slope of the Eastern Andes, flying over heavily forested mountains and then out over the Bogotá

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Plateau. The plateau is an old lake bed. A checkerboard of cultivated fields, hedge rows, scattered dwellings, fields with cattle, were seen as we approached the air port W of town. We landed about 5:00 p.m. It was sprinkling lightly and the sky was overcast. A few breaks in the clouds to the west permitted penetration of orange light of the late afternoon sun. Rain pools stood on the air port runway.

José Borrero, ornithologist associate of Dr. Dugand was on hand with our guns permits which he passed through the door at customs. We got through customs without a hitch. Borrero introduced us to Torres Borreto, Alvaro, a veterinarian who is interested in herpetology as a hobby and Osorno (Hernando) an entomologist. All three gentlemen are associated with the Instituto Ciencias Naturales de Bogotá. Torres drove us to the Hotel Claridge, where we found accommodations to our liking.

Oct. 13 Bogotá is at an elevation of about 8500 ft. and is situated on the E side of the Plateau, at the foot of abruptly rising mountains. The plain is longer than wide, extending in a N-S direction. We spent the day visiting briefly at the Institute & shopping, with Borrero's help, in Bogotá. Torres introduced us Dr. Richter (Henri? Richter). He

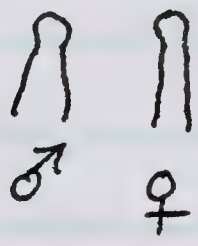
Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Oct. 13 has recently published a paper in ornithology and has an interest in insects. Torres and Osorno showed us an 11 ft. *Eunectes murinus* that was caught by a military man over on the eastern Llanos. This fine boa is yellowish brown in ground color, marked dorsally with rounded and oval dark brown spots; iris colored much like dorsal surface of head, making eye inconspicuous; an orange post-ocular stripe (broad); venter light colored, tending toward orange yellow on underside of tail. They had the snake in a half filled bath tube with an electric reflector lamp for heat. They had tried feeding *Hyla labialis* but the snake would not feed. They said the animal lived in marshy places and that they thought it fed on ducks.

I examined the *Hyla labialis*. There were 3 live individuals, all females. Torres said the only sexual difference (external) was that between the first digit of the male & female.



These hylas are a beautiful green and are without an eye mask; they have a dark line along the edge of the upper lip; there may or may not be dark flecks dorsally; there is purplish blue color on the undersides of the hind limbs; there is no sex difference in the throat color.

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Oct. 13 Torres showed us a specimen of *Phenacosaurus heterodermus*. This animal is Anolis-like and like it can readily change color. It was fed live cockroaches. It is different from *Anolis* in having a compressed tail and a vertebral ridge of projecting scales.

Torres also had a ♂ & ♀ *Leiocephalus trachycephalus*. These also fed on the cockroaches. The male has a black breast band. The animals look like *Sceloporus* but have a vertebral ridge of scales.

Following our visit we returned to the city with Borrero who helped us get bargains on our shopping and who arranged a money exchange at a rate of 3.35 to 1.

Oct. 14 Took a taxi to the Instituto. Worked over the herpetological collection until about 11:00 a.m. Learned that there are two *Osdipus* in the mountains above Bogotá. They are *O. andicola* and *O. adspersa*. They are evidently sympatric. Evidently the only difference between them is the length of the limbs. According to Osorno, Dunn recently described *andicolus*. Specimens labelled as these two species seemed superficially identical to me. They occur under rocks, according to Torres. A large female *adspersa* had many large heavily yolked eggs — oviparous?

Stubbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Oct. 14 Torres showed us a mata mata, the first from Colombia; specimen procured in the Amazonian llanos. This odd chelonian lies buried in mud with only its flexible elongate snout above the surface according to Osorno.

In the afternoon Dr. Gutierrez and Dr. Asce, a geologist at the ~~Geol~~ Servicio drove us to the N end of town where we observed many beautiful homes, not unlike those of the Hollywood stars, situated in Beverly Hills & Encino in southern California. The great majority of homes have tile roofs. We saw Bolivar's (Simon) estate, the man who liberated ~~of~~ Colombia and other So. Amer. countries from the Spanish. Bolivia is named after him.

Oct. 15 Wrote letters during forenoon. Out to hillside E of town to look for amphibians. It has rained off and on night and day since arriving in Bogota. We have seen the sun only a few times. It is chilly. We wear heavy clothing, I a wool ~~also~~ sweater under my suit coat. We dressed for rain. The hills to the E of town rise abruptly and there are many indications of earth slides. A thick mat of a wire-grass like growth covers much of the ground but there are areas of exposed buff-colored sandstone. The hillsides

Stebbins, R.
1950

Journal

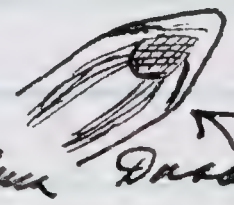
Notes on Herpetological Specimens in the Instituto Ciencias Naturales de Bogota

Oct. 14 **Snakes**

Ninia atrata - sp. about 1 ft. in length; dark brown above, cream below; no pattern except broad head-neck band (red?); keeled scales. Tolima.

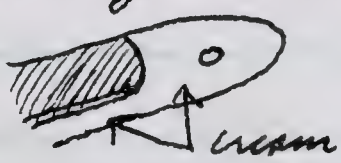
Pseustes poecilonotus - sp. about 2½ ft. in length; black head; cream upper labials & underside of head; scales cream with black margins; central dorsal rows keeled; venter lightly dark blotched.

Ammantodes - Much laterally compressed; broad brown saddles; cream interspaces; top of head brown; eyes large; very slender snake with broad head.
(*Ammantodes cenchoa*)

Thamnodynastes pallidus -  note head & neck markings. Rio Magdalena Dorsal aspect
Specimen 1 ft. ± long.

Chironius carinatus - Several ft. long; Ventral scales outlined with black Antioquia, Cloros.
bluish above; single, large, round whitish spot on each lowermost dorsal scale; slender snake

Enulius flavitis - solid cream head; eyes weak; uniformly brown above, cream below; 1½ ft. long.
El Castro - Santander



Dipsas nebulatus - 1½'±; lat. compressed like *Ammantodes*; brown above with vague light cross bands narrow + widely spaced.

Stabbrie, R.
1950

Journal
Herpetological Specimens in Instituto Ciencias Naturales de Bogota

Snakes

Oct. 14 Dipsas nebulatus - cream & sooty ventral blotches.
Pliocercus euryzonus - Sinitarra - 750 m.
broad blackish bands - widely spaced - narrow cream bands - bands inside body.

Journal

Stebbins, R.
1950

Notes on Anurans in the collection at Instituto de Ciencias Naturales, Bogotá, Colombia, S.A.

Oct. 14
(Recorded by J. Hendrickson)

Hyalolaxus granuliventris - jar of 20+ specimens labelled "Buenavista, Meta". S.V. length to about 3 cm. Light phase c̄ def. stripe from nostril thru eye, widening onto shoulder (stripe width = 2/3 d.v. eye diam.) Toe pads with thick portion bilobate; margin entire: . Transverse dark bars on hind limbs, tending toward blotching in some. Dark line (broken) down ant. surface front limb. Upper aspect dark, lower aspect white (in alcohol), c̄ fairly sharp break in pigmentation between the two surfaces.

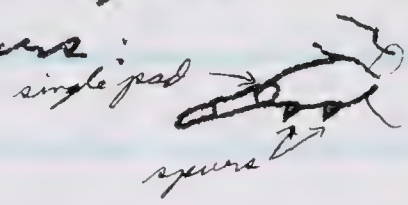
Leptodactylus pattersi - jar of about 10 juv. to adult (?). "Villavicencio" S.V. length to about 5 cm. Broad, indefinite darker area dorsally, grading through most of sides to light ventral area. Legs with scattered dots & flecks of dark color, these extending over light ventral surface of legs. Definite raised, granular area, yellow in alcohol, touching post.-ventral border of tympanum. Patches of yellow (in alcohol) from axilla post. 2/3 distance to attachment of hind limbs. More of same at sides of sacral region and post. surface

Stebbins, R.
1950

Journal

Oct. 14
(Recorded by
J. Hedrick)

of femoral portion of hind limb. Toes not expanded at tips. Gripping surface of thumb of male (?) with two prominent, hard, black, sharp-pointed spurs;



v. view of left thumb of male

<u>Eleutherodactylus</u> <u>bogotensis</u> - jar labelled "San Miguel, 2800-2900 m., Cundinamarca". To 1" S.V. length; expanded toe tips; finely speckled lower "rump"; impression of dark bands radiating from eye region to upper lip. Yellow, orange, & dark brown in life.

<u>Eleutherodactylus</u> <u>elegans</u> - jar labelled "San Miguel, 2800-2900 m., Cundinamarca". 1 specimen, about 3/4" S.V.; expanded toe tips; dark belly, dark dorsum.

Stubbins, R.
1950

Journal

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 farther up are covered with what appears to be a kind of chaparral. Here and there are groves of eucalyptus. On an open W facing, grassy hillside about 200-300 ft. above town we got many Phyllobates. The cricket-like calls of these frogs came from everywhere about us — in the grass, under rocks, etc. We found several pools in slumps in the sandstone where tadpole carrying adults were discovered. A group of 3 boys joined us and helped in the collecting. We began our work about 2:45 p.m. We were careful to avoid putting our hands in ~~our~~ or near our mouths as human feces were observed widely distributed over the ground and it was not an uncommon sight to see a person in the act of relieving himself. Amoebic dysentery occurs in Bogota and it is not surprising.

We walked 1/4 mi. to NE to near the city park where we thought we might get salamanders. We worked the head of a small stream, 1-2 ft. wide x 1-2" deep. Above the stream in loose coarse soil we got about 8 anurids of all sizes. A small orange yellow spotted snake was found under a rock along a rocky tributary gully where no water flowed. A brown hyla-like frog was found in some numbers here and

Stebbins, R.
1950

Journal

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 a few were taken at the previous *Phyllobates* site. There was a thick tangle of waist high vegetation along the stream but elsewhere growth was low and in places there were extensive stretches of dark soil with scattered rocks. We worked in an open eucalyptus grove. Some tadpoles were dipped from pools along the stream.

We returned to our hotel about 5:30 p.m. Enroute black vultures (?) were seen.

We spent considerable time washing our clothing and persons, following our presumed exposure to feces borne disease. The remainder of the evening was occupied with the preparation of specimens. We had ~~prepared~~ 28 *Oedipus*, 25 Hyla-like frogs, 62 *Phyllobates* including 6-7 egg clusters and tadpoles; a single small snake.

Oct. 16 This day was largely taken up with shopping and making arrangements to leave for Villavieja. We met Don Pericho ("little parrot") who was detailed to outfit the expedition; incidental expenditures were cared for by John & myself. The plan was for John & I to go to Villavieja by ourselves on the 17th, Perico to follow with the camping gear, food, etc on the 18th.

Stebbins, R.
1950

Journal

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 16 This would allow us to begin collecting a day earlier than would be possible otherwise. This evening Torres and Osorno arrived as we were packing and finishing up our specimens. They came to say goodbye. Shortly after their arrival, Roberto Sarmiento and Hernando Gutierrez came, similarly to pay their respects. Torres & Osorno quickly said goodbye and were off. Sarmiento is married to a girl from Minnesota and has a PhD from the University of California. He speaks good English. Torres has a sister that lives in Hayward. About 9:00 p.m. Dr. Arce, a geologist at the Servicio arrived. We were to leave with him our suits and other belongings that were not to go to the Magdalena Valley. I left my overcoat and a jar of preserved specimens at the hotel Claridge.

Oct. 17 The train left sharply at 7:00 a.m. this morning. The sun was shining for a change, but there was a low ground mist in places. The railroad is narrow gauge, our engine and car were quite modern, however, and really better than I expected. We crossed the Bogotá plain, much of it cultivated, and began the descent

Stebbins, R.
1950

Journal

Bogotá to Magdalena Valley, Colombia

Oct. 17 into the Magdalena Valley. As we passed over the western lip of the Bogotá plain a savannah, we went through country almost identical in gross aspect to the Berkeley hills — rounded hills, a rock outcrop here & there, green grass, few bushes, mostly in the gullies and scattered groves of ~~eyes~~ eucalyptus. Shortly after beginning the descent we passed through what appeared to be cloud forest. Wisps of mist hung ~~of~~ over the hillsides; vegetation was luxuriant. Tall trees with broad crowns, decked with epiphytes and hanging vines, projected above a dense understory of broad leaf growth. This vegetation formed a relatively narrow band on the W-facing slope of the E Andes. As we descended further the country became more open; many banana groves appeared. Native huts could be seen tucked away here & there in the hills. Coffee groves were common. The "trees" are low rounded dark green bushes 3-6 ft. high, with red berries. The train made many stops and at each the people swarmed out with trays and baskets of food. Mostly of the people were scantily and poorly clad, their clothes dirty and nearly all were barefoot. Banana leaves are used to rap eggs in elongate cylinders, meat in flat paddies, etc. A gruel-like milky drink

Stebbins, R.
1950

Journal

Magdalena Valley, Colombia

Oct. 17 was for sale and seemed to be quite popular. Beggars were common, many of them diseased. One beggar with his face grossly disfigured seemed to be suffering from onchocerciasis. There was a large swelling below each eye and a tortuous swelling across the bridge of his nose.

I watched for reptiles at each stop but never saw one. Birds and butterflies were the most obvious animal life. It rapidly grew warmer and more arid as we approached the valley floor.

The train turned S at Girardot and we entered cultivated lands along the Magdalena river. The river is broad, moderately swift and muddy above Girardot. As we neared Villaviejo, the country became still more arid. We arrived at Villaviejo about 7:00 p.m., after dark. We were immediately set upon by a swarm of small boys who wanted to carry our 60 lbs. suitcases. John tried to dissuade them but they won out and our precious bags with our irreplaceable Bouin's fluid, cameras etc. were precariously balanced on the backs of small boys and we walked into town. The boys led us down the muddy, unpaved central street, about 175 yds.

Stebbins, R.

1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Oct. 17 to a "hotel". Here we ~~set~~ slept on canvas cots in a bare room with cement floor. It rained hard all night. I would guess 2½ to 3" of rain fell.

Oct. 18 During our stay at Villavieja, we took our meals at Senora Marias Sanchez "restaurant." She, her husband, and several children were most anxious to please - her "Doctó" and "s-señor" comprised much of her speech. John explained that our doctor wanted us to have boiled water and thoroughly cooked food and no raw vegetables, hence we hoped thereby to avoid contaminated food & drink. "Agua hervida" (boiled water) was emphasized.

We went out in the rain and hunted birds on the slope E of the railroad track E of town. We were accompanied by 6-7 small boys who were in the mood for tips ("propinas"). I got a Crotophaga ani, Coryphospingus pileatus, and Tyrannus melancholicus. The afternoon was spent preparing skins.

Perico arrived about 7:00 p.m. with our baggage. Paulino Perdomo was on hand. We met his father and found he has at least 2 (perhaps 3) brothers. Paulino is 18 and a very nice-looking, pleasing boy.

We got toads with the help of small boys.

Stebbins, R.
1950

Journal

Villavieja to Cerbatana, 5 kms. N Villavieja, Huila, Colombia

Oct. 18 by working the small quebrada in town.

Oct. 19 Perico rounded up 5 burros and got them loaded with our gear. We were called before the "alcalde" or mayor (or chief of police) just before leaving town. He cross examined us, asking age, whether or not we were married, name, duration of stay, etc. I could not but wonder if this was not to impress members of his staff who stood nearby. The "alcalde" was a young man, better dressed than most, and appeared superior mentally and physically to all others encountered in town. After Perico talked with him for a time and John had showed him the character of our ammunition, we were allow to go.

We headed N with our burros train, more or less paralleling the railroad track. After several hours of tramping across semi arid country, we arrived at Camp Cerbatana. This was at midday.

I photographed the small boys who had accompanied us to drive the burros & they returned to town with their animals.

I shot one Sporophila near camp.

John & I went out and hunted frogs along the quebrada and in a banana patch near camp.

Stebbins, R.

1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20 Our camp site is surrounded by barren hills with little vegetation but scant grass except for scattered clumps of broadleaf growth. These patches are dense and quite luxurant. They occur mainly along gullies where there is more water. An organ-pipe-like cactus is scattered about but is not abundant about camp. The quebrada Cerbatana passes 175-200 ft. to S of camp and flows W to the Rio Magdalena. There is little water. The stream averages 6-10 ft. wide and is 2-4" deep. The stream bed is gray sand with here & there gravel deposits. The vegetation near the stream is green & heavy. There is a small farm house & several banana patches above camp. Citrus fruits, bananas, pork, and eggs have been supplied by this farm. Cattle, sheep, goats, pigs and other livestock are maintained.

After checking the drainage basin above camp, we decided the water was safe without boiling. The farm is in another drainage.

I have just learned Paulino's full name. It is — Paulino Perdomo Rojas Avilez Espinosa. Perdomo = father's name; Rojas = mother's family name; maternal grandmother = Avilez; maternal

Stebbins, R.

1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20 grandfather = Espinosa

Work mainly S and SE of camp, along quebrada Cerbatana. Got 7 birds (see catalogue). Went jack lighting for frogs. Got several *Hyla*, *Bufo*, and *Leptodactylus* (?).

Oct. 21 Five birds procured today (see catalogue).

Oct. 22 Seven " " " " "

Got my first *Ameiva*. Hunted along quebrada Cerbatana to river. *Ameiva* found ½ mi. from river. Got to *Gonatodes* in rotten log. Male has bright yellow orange throat; head & tail with yellowish cast.

Oct. 23 Ran some critical maximum tolerance tests on *Conenidophorus lemniscatus* today. These were on specimens moved by Pauline. The animals were staked out in the sun, tied around the waist with a light thread. No cover was available.

Shot an iguana in a big tree near the quebrada, ¼ mi. W of camp.

Found 2 *Gonatodes* on tree trunks in camp. One captured. Animals active in daytime.

Shot 2 birds. Walked about 1 mi. WSW of camp along railroad track; returned about 11:00 a.m.

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 Walked down quebrada, west 2 miles ± to river. Heard parrots, saw flock of parakeets (Forpus) - about 8 birds. The parrots remind me of pinyon jays. They move about in flocks and keep up a raucous, shrill calling. They tend to fly in formation, 2 or 3 birds (or more) in a group with in the larger group. Saw what appeared to be a female redstart.

Got a Hylophilus (viridis) and saw at least 2 others. They were in open ~~flo~~ foliaged trees 15-20 ft high, along the quebrada. Searched for Synallaxis in area where I got one on the 22nd but no luck. "Squeaked" repeatedly in areas of thick brush. Large reddish grosbeak responded frequently. Looked for Crotophaga ani near banana grove along river on S side quebrada Cerbatana. Dr. Pearson got ani here this summer. Shot 3 birds, all sulcirostris. Saw many anis but they all were evidently sulcirostris.

Found 4 arboreal termite nests. Shot a bat in the opening of one. Found several nests on the ground; broke open one. It is largely an earthen structure, riddled with tunnels. It was difficult to kick over. Large ants were present in some of the galleries. One nest was 4 ft high, shaped so - .

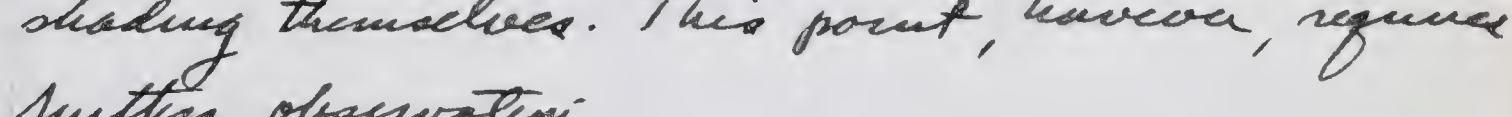
Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villarrica, 1400 ft., Huila, Colombia

Oct. 24 Leaf cutter ants are common. There smooth pathways, 3-4" wide are seen in many places. The insects move along 3-4 abreast, carrying pieces of leaves, usually green, although an occasional individual may be found with a withered leaf. Their marching columns may be found on tree trunks which they climb for the leafs. A disturbed column through our camp piled leaves in an area 8" across. The leaves are held with the flat surface vertical although when the animals go into the sun, it appears they may hold the leaf bits more nearly horizontal, thereby shading themselves. This point, however, requires further observation.

A cicada that sings in the daytime sounds like a small engine starting



It sputters again & again, faster and faster, and finally develops a continuous drone.

Full moon tonight with sky clear. John shot a wild dog about 9:00 p.m. He was yelping just outside of camp. He sounded like a baby crying. He was spotted by eyeshine & shot with #4s. The animal is fox-like but with smaller ears than our gray fox and with less bushy tail. The feet and upperside of the tail are blackish.

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 25 Wrote notes all morning. Ran tests on critical maximum thermal tolerance for *Cnemidophorus lemniscatus* in afternoon. Perico & Paulino seined fish, obtaining 3 different kinds, all small, from the quebrada S of camp. Went out after dark to get owl that has been calling from large tree W of camp. He begins at dusk, calls for 15 minutes or so, then apparently forages. I arrived too late. Fireflies active tonight, often taken for eyeshine.

Oct. 26 Worked area W of camp and N of quebrada, just beyond railroad track. Here Dr. Pearson got quail. Came upon 7 or 8 ani. Shot 3. Got one *Columbigallina*, ♂.

In afternoon went E up quebrada. Got female *Tyrannus* with large oviducal egg.

Tried for owl again but he called only once, at 6:15 p.m., just after sunset.

John got a corn this evening, about 8:00 p.m.

Paulino ~~says~~ said he heard an anteater - who ‿ ‿ . This was
who ‿
who ‿

about 7:30 p.m.

Stebbins, R.
1950

Journal

Cabatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 27 Everything wet from last night's rain. Came upon a flock of 10 anis just W of railroad track and N of quebrada. They proved to be our long sought *Crotophaga ani*. As I stalked anis, 2 quail roared from under foot. Just my luck to see them when busy with another species! Saw a *Hylophilus*, several pairs of *Columbigallina*, *Steggidopteryx* in flight.

Observed some Colombian men (3) making camp at edge of quebrada. One had large shallow pan and appeared to be panning for gold. Paulino says there is gold here.

About 12 turkey buzzards gathered at carcass of dog John put out on hill E of camp. Among them were 2 or 3 larger black and white birds (king vultures?).

Oct. 28 Out this morning about 6:30 a.m. Walked down quebrada S of camp to just W of railroad bridge. Shot one *C. ani*; saw 2 others. Got of *Sporophila*. Repeatedly tried to "squeak up" *Synallaxis* but failed. Large swift-like bird in air this morning along with rough wings. Sky overcast; rained lightly.

After breakfast went E up quebrada. Got 3 *Columbigallina*, *Synallaxis*, *Colinus*, and a *Tyrannus*. Saw 2 other *Tyrannus*.

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villarrica, 1400 ft., Huila, Colombia

Oct. 28 Saw & shot at an Iguana. Boy brought in a live Iguana - cost me 50 centavos. Pauline shot a hawk with an Amazon tail in its stomach. Pericó captured a live marmoza. Oppressive day although temp. only 29°C at noon. Humidity high.
Owl began at 6:15 p.m. again tonight. Our usual frog chorus from banana patch S of camp is going strong tonight. These frogs have chorused every night since we came to Cerbatana.

Oct. 29 Out this morning about 7:45 a.m. Rain last night and rain now threatening. Shot Coryphospingus male on S side quebrada 150 ft. E of railroad bridge. Rain drove me to shelter of overhanging ledge near railroad bridge. Rained hard for about 1 hr. Walk on down quebrada. Tried for a veiéo but missed. Saw several pairs of yellow warblers. Birds quiet down vocally and in movement when it rains. Rain drove me to shelter of another ledge. Water of quebrada rose rapidly. Entire bed of wash covered by swiftly flowing, muddy water.

Got Synallaxis and another Coryphospingus

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 29 along well vegetated gully N of quebrada. Rocky, sparsely grass-covered terrain on either side. Storm broke up about 11:00 a.m. Got another of Synallaxis on S side quebrada E of railroad bridge.

Small snake brought in by man who brought in larger individual yesterday. John tried baiting vultures with carcass of wild dog shot last night. Got only turkey and black vultures and caracaras to come, no kings.

Perico got a mamoza last night. John made a pen for it today.

Perico and Paulino went out late this afternoon. They returned with a large goatsucker, with its tail shot off.

Oct. 30 Waited until about 8:30 a.m. until rain let up, ~~#~~ before going collecting. Walked W along quebrada toward river. Got an adult of Synallaxis, 50 yds W of railroad bridge. About ½ mile down quebrada from camp, & side tracked into the more arid, organ-pipe (?) cactus country. Hoped to get Synallaxis a quail. Saw mockingbird-like species that look, behaved and gave an alarm note like a mocker. Nearly everywhere heard "squeak"

Stiles, R.

1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30 A small wren-like bird with black face, throat, and breast and white line over the eye & extending posteriorly along side of neck, appears. A tan colored individual with black & white barring of tail and wings also appears. Perhaps the latter is the female.

I saw no quail, although at least 3 times, at widely separated locations, I heard one call several times. The quail certainly do not seem to be in strong voice.

Following my side trip to N of quebrada, I swung back across the quebrada about 250-300 yds. above its junction with the river. I worked the S side down to the river and along the river bank, working S, about 300 yds. I then cut across country, over a low ridge and ~~across~~ along the flank of a hill to the railroad track. I arrived at camp at 12:30 p.m. Got 4 Hylophilus & a Sporophila erionota. Got an excellent view of the Magdalena River and surrounding mountains from the ridge. The river was swollen & muddy from recent rains.

This afternoon a boy brought in a red, black & white banded king (?) snake and a young iguana. Paulino found a Columbigallina nest with 2 eggs, near camp.

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 31 Paulino tells us that rains began about 15 days before we arrived at Villavieja. He says they will continue through November with a little rain in December.

Went out about 10:00 a.m. during lull in storm, thinking it was going to clear. It rained hard for several hours, instead. Most birds were under cover and quiet. Picked up Bufo about ½" snout-vent near side of torrent through culvert under railroad track 50 yds. NW of camp.

Saw swallows flying in rain. There were 2 lots, seen about 20 min. apart; they flew to NE. There were about 15 birds in the first group.

Spent afternoon making box with trays for our bird skins. Rained intermittently all afternoon. Wrote letters. John went out last night ~ ~ and heard out-

~ ~

~ ~

eaters. They seem to say oh-oh-hum in a weary tone of voice. The last note is low and muffled.

Stebbins, R.

1950

Journal

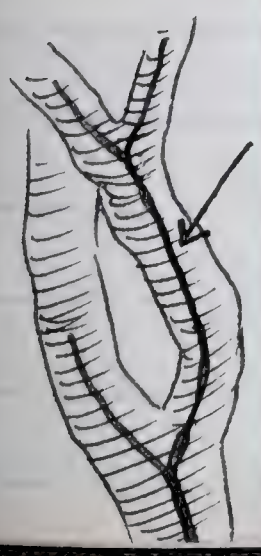
Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia.

Nov. 1 Bright, clear morning. Everything sparkling with rain drops. Small silver trickles in the gullies, run off glistening in the morning sun. Birds numerous, active, and in voice. Heard more quail than any day before.

Started about 7:00 a.m. Headed S along "road" to Villavieja, then up to top of mesa S or SW of camp (about ¼ mi. distant), thence down S side & out to railroad track; along track toward quebrada Tejar, a side trip across a corn field and out to quebrada E of track; down quebrada to river; back to track & along track to camp. I arrived in camp about 1:00 p.m.

Got 2 Synallaxis (saw a third), 1 Hylophilus (saw another), 2 quail (saw about 7 others), 1 Crotophaga ani (saw about 6 others) — J. Hendrickson prepared skin, 1 Coryphospingus (saw many others), 1 large Cuculus. Saw many Cnemidophorus, especially at midday. First one seen at 9:30 a.m.

Noted that termite tunnels on trees course along shelter side of limbs. When it rains these areas get least water.



Cicada that sounds like motor starting gave good performance in camp this evening —

Stebbins, R.
1950

Journal

Carbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 1 It seems to begin on one cylinder, then swings to 2, then briefly 3, and finally 4+, or the fully operating motor.

Heard wild dog tonight. It does indeed suggest a child crying or perhaps better a high pitched lamb cry.

Everything is green at this season. A tall grass, about 3–4 ft. high borders the railroad fill. The fruits are mature but are green and will probably not fall for some time yet. The low growing oxalis-like plant is lush + pale green. It reaches no higher than 6 or 8" in most places. Found it common on the mesa S of camp, among the organ-pipe-like cactus. Pools of water from recent rain were abundant on mesa.

Frogs are going strong again tonight; also *Bufo granulosus* is occasionally heard in small quebrada W of camp.

Nov. 2 John is to finish up the bird gonad work, I to start on reptiles. I worked on body temperatures of *Cnemidophorus*, shooting them and quickly taking their temperature. I started work about 9:00 a.m. and walked SW toward

Stebbins, R.

1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 2 Villavieja along the railroad track. I recorded every lizard seen between camp and a point on the track about 100 yds. S of farm immediately S of quebrada Cerbatana — a strip of track about 1/4 mi. long. I reached the end of the strip at about 11:30. I collected briefly on my return to camp for lunch. Out again at 1:30 p.m. Walked over above strip and then on S to quebrada Tejar where I got a Hylophilus, our last vireo. Lizards became scarce, probably due to afternoon overcast. Saw 3 or 4 Crotophaga major near quebrada Tejar. Ran a few critical maximum temperature tests at midday.

Nov. 3 Spent day in camp. Labelled herpetological specimens. Perico brought in fresh Cnemidophorus, nearly all males, which I preserved for gonad study. Ran a maximum thermal tolerance (critical maximum) on a young Ameiva roosted by ~~Pacheco~~ Hendrickson, near camp.

Nov. 4 Out this morning about 8:00 a.m. — on a lizard hunt. Peeked into drain near camp for geckos. Saw 3 bats. Will get them later in day. Turned rocks & several old fence posts near railroad bridge near camp. Saw scorpion, several millipedes, earthworms, and one Gonatodes (under fence post) that got away. Saw no Cnemidophorus until near quebrada Tejar. Took photograph (in color) of grassy growth near railroad

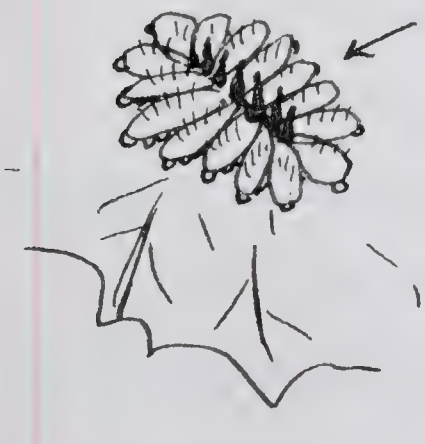
Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 4 track as "documentary" evidence of condition of grass at this season. Many sudestos active in this grass which is now beginning to shed seed in some areas. Walked to bank of Magdalena River near pump house, 1/4 mi. S quebrada Tajac. River swollen, muddy, quite swift. Shot roughwing swallow from telephone wire near quebrada and saw another. Collected Cremidophorus for thermal scale, no specimens saved. Returned to camp at about 1:00 p.m. Noted a large green katydid, evidently identical to species seen about my home in Sherman Oaks in southern Calif. Saw several sparrow hawks and shot at a young bob-white that was singing a clearly whistled 2 note song. — — —

Noted a circle of lepidopterous larvae on underside of a leaf. All faced outward; their feces arose in columns at the center of the circle.



In afternoon ran a critical max. therm. tolerance test on Anolis & 2 snakes. Photographed these animals ~~be~~ after they were killed in the sun.

About 4:00 p.m. John & I caught the bats (4 of them) seen by me ~~this~~ morning. Put up one skin. Also prepared swallow skin.

Stebbins, R.
1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19 -
Nov. 4.

Map of area of Collection

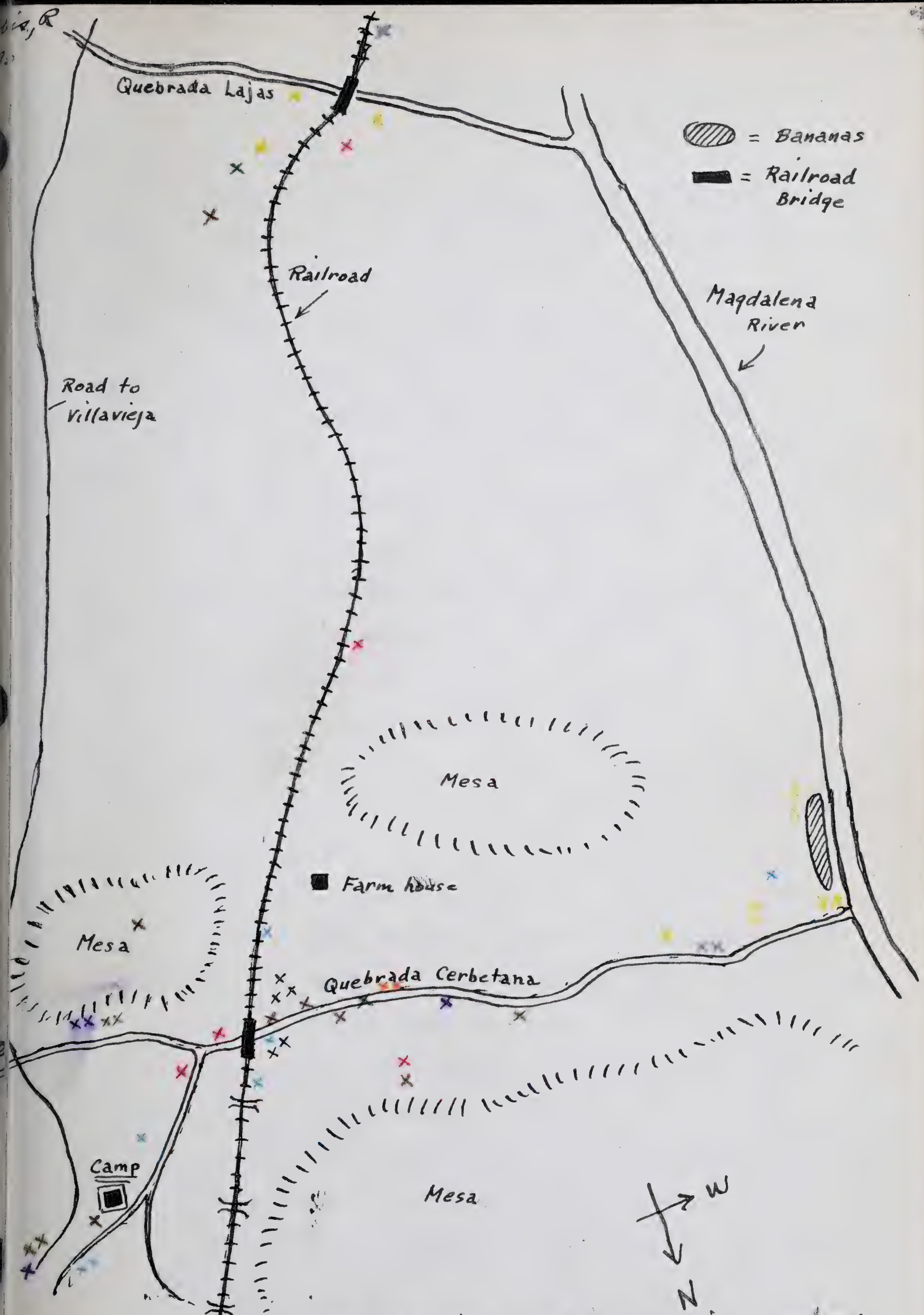
Stebbins, R.
1950

Key

- × Sporophila
- × Tyrannus
- × Columbigallina
- × Forpus
- Hylophilus
- × Synallaxis
- × Coryphospingus
- × Stelgidopteryx
- × Coereba
- × Crotophaga

Mesa

Key to map showing distribution of birds collected Oct. 19 to Nov. 4, 1950, in vicinity of Quebrada Tapia & Quebrada Cabetana



Map showing locations of birds collected Oct. 19 to Nov. 4, 1950, in vicinity of Quebrada Lajas & Quebrada Cerbetana, Huila, Colombia.

Stebbins, R.

1950

Journal

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 5 Spent day in camp. Digestive upset. Prepared 4 bat skins. Ran a few critical maximum thermal tolerance tests on Cnemidophorus. John & Perico arrived from Villavieja. John attended mass. Got an iguana from boy in Villavieja (& also some anurans). Ran critical maximum test on iguana (can ad. ot). Fellow brought in a Leptodeira-like snake, alive. Offered him 50 centavos which he accepted.

Nov. 6 Worked area W of railroad track and largely N of quebrada Cerbatana for lizards. Wanted especially to get Gonatodes. Rolled rounded weathered sandstone boulders but found little. Only saw 1 Gonatodes under a stone. Stirred out several Cnemidophorus, however. Several of these were covered with sand suggesting they had been buried. Got geckos under back of fence posts and in culvert near camp. Got a small Bufo, about 1" snout-vent at side of small gully 200 ft.+ NW of camp. Shot several Cnemidophorus for use in size range study. Paulino & Perico also rooted several. Photographed habitat of Gonatodes (rotten log at side of Quebrada Cerbatana) and Bufo granulosus. Wrote notes on coloration of Gonatodes, Rana palmipes, etc.

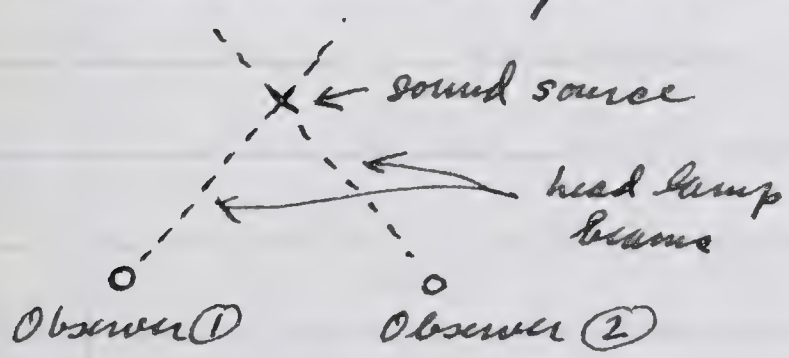
John and I went out at dusk to work on anurans. A chorus of leptodactylids

Stebbins, R.
1950

Journal

5 mi. N Villavieja, 1400 ft., Huila, Colombia.

Nov. 6 has been heard every night since coming to Cerbetana. Wrote notes on voice of isolated individual 100 ft. NNE of camp, then walked S toward banana patch. About 75 yds. from patch, we became aware of a door buzzer-like note which I thought resembled somewhat Microhyla as I knew it in Arizona. The sound was stronger, however. We finally located the caller, by taking posts roughly at a rt ∠ to one another in relation to the sound, and then flashing on our head lamps when we had determined direction. Where the light beams crossed, a search was made. After 3 trials, the animal was found, beneath a Bermuda grass-like tangle.



We then began work on leptodactylids. Two distinctly different calls could be heard. The most common was a low chirp with rising inflection and guttural undertone; a second, less frequently heard call, might also be described as a chirp with rising inflection but it was pitched about 3 notes higher than the first and seemed to be a pure whistle

Stebbins, R.

1950

Journal

5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 At first we thought a sex or age difference might be involved but it was found that 2 species were present. In at least 2 instances the higher pitched voice was connected up with a larger striped frog and every lower pitched voice seemed to emanate from the smaller, unstriped form. In several instances the unstriped frogs were found calling from the mouths of shallow burrows. The vocal sac

was never seen fully expanded but appeared to be unpaired and rounded (see sketch). Tentatively, it appears that the males take up calling posts which later serve as the nest site. A female is attracted, amplexus & egg laying occurs.

In addition to the leptodactylids, we obtained a number of Bufo granulosus.

We finished our amphibian work about 11:00 p.m.

Nov. 7 The day was spent in camp getting notes on life colors of Microhyla, Leptodactylus, Bufo. Photographs were taken of these forms. I walked down to the banana patch visited last night and got photographs;

Stebbins, R.
1950

Journal

5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 7 The following crops are being grown in this small area (a little over 1 acre): bananas, sugar cane, yucca, rice, watermellon, maize.

Paulino & Perico brought in an Oxybelis they shot. Its head was missing. I saved the remains, however. They also got several more Cnemidophorus. About 3:30 p.m. we began breaking camp. The bird work is done except for 3 swallows which we hope to pick up around Villavieja. We have decided to work out of town to get more keeps. and give the mammals a try at a new locality.

A man & boy arrived about 5:00 p.m with a flat car ("mesa"). We had to wait until the train to Neiva passed, then we put the car on the track, loaded on all our gear and headed for town. We coasted

much of the way to the pumphouse, just beyond Quebrada Lajas. There were 3 long downhill stretches. I believe we must have reached 30-35 mi. per hr. on one ~~some~~ of these mesas.

Stebbins, R.
1950

Journal

5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 7 I suspect from this run that we must have dropped 50 ft. in elevation between Cerbatana and Tajas. At several places between Cerbatana & town, we heard leptodactylids. One of the places was the form S of Cerbatana Quebrada. Paulino says these frogs are heard at all times of the year and their froth nests are also of persistent occurs.

Nov. 8 We are rooming at same place used when we first came to Villavieja. Paulino is set up to cook and we are boiling our drinking water. Visited the village padre this morning to obtain permission to hunt geckos in the chapel and cemetery and bats in the steeple of the church.

Paulino ferried us across the river to an island where he claims there are many snakes and white anis. We went across in a dugout canoe, hollowed from a single log. Paulino claims it will transport 12 to 18 persons. It was a swift crossing as the river was fast. We spent several hours on the island which is about $\frac{1}{2}$+ mi. x $\frac{1}{4}$+ mi. Evidently much of it occasionally becomes flooded judging from the drift wood. We looked for a caiman Paulino said lived in a shallow embayment of the river. We found his tracks only. We got little on the island. John

Stebbins, R.

1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Nov. 8 picked up a mud turtle and I some tadpoles in a pool in a banana patch. We dug up a boa, killed the day previously, and saved the skin. I saw one snake, like RCS 4985. On leaving the island, we set a hook baited with a dove, for the caiman.

We took a swim in the river, using our shorts as trunks. Paulino and his brothers gave us the idea as they seemed to be enjoying themselves so. Paulino swam with his loin cloth for covering but his brothers went in nude. They were modest at first, covering their genitalia with one hand, upon emerging from the water. Later when John & I went in, they didn't bother with this.

Paulino uses his loin ~~cloth~~ cloth in a variety of ways — to carry parcels, as a head wrap to keep perspiration out of his eyes, as a dressing curtain, as a towel, as a covering for food, as a swim suit, etc.

After dark we sought Thecodactylus in the chapel. One was seen but it crawled into a crevice between the wall and ceiling. Many Gonatodes were seen on the white-washed wall of the graveyard and on the grave stones. We collected several.

Stebbins, R.

1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Nov. 8 Three large bats flew into the chapel. We closed the doors and succeeded in knocking them down with our long, lizard sticks. This bat proved to be a leaf-nose variety, like all the others I have seen so far.

About 8:30 p.m. we went down along the river to see if the caiman had taken the hook and to listen for amphibians. The caiman was not around. We got several *Hyla crepitans*, a single ~~*Pseudopaludicola*~~ and heard a chorus of the two kinds of leptodactylids taken at Cabiona. In this instance, the chorus seemed to be composed of only one species rather than a mixture of the two as we found at our earlier camp.

I took photographs of the caiman habitat, the river, Paulino swimming in the river, Paulino ferrying Percio and me across a small arm of the river.

Nov. 9 Photographed *Bufo marinus* (JRH 1510), *Hyla crepitans* (RCS 5030), a frog (RCS 5031), *Gonatodes* (RCS 5034, 5035) and *Cnemidophorus* (RCS 5038). Wrote notes. From 3 to 4:30 p.m. searched chapel, graveyard, and stretch of river bottom W of graveyard. Got 1 *Gonatodes*. Saw at least 3 others and a small snake, like RCS 4986.

Stebbins, R.

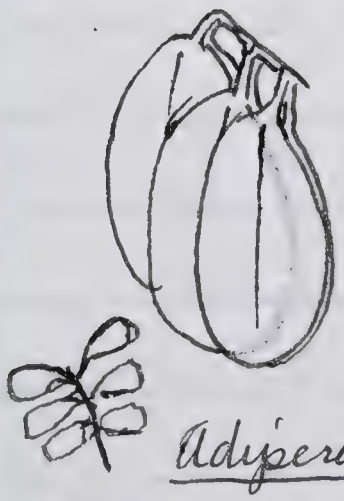
1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 The river has risen and is carrying much debris. Small boys have been swimming out to get the logs and other pieces of wood. The water is very muddy and swift and the rapidly carried logs make this activity seem hazardous, to me.

Set out trap line in area SW of graveyard, along a slough about 100 yds. from the river. ~~Return~~ After dark anurans began to call. We got a Microhyla and heard several others; we also got a small new Hyla (6 individuals) and one Hyla crepitans. Crepitans was in chorus. John shot a caiman. I stopped at the chapel and got Thecadactylus (shot with 12 shot shell). Saw several of the black & yellow banded caterpillars with red heads. They are often seen crawling ~~of~~ over the grave stones. The leguminous herb, common in the area was found with leaflets folded, as sketched. The terminal pair of leaflets was folded down and between the pair immediately posterior to them and these in turn between the basal pair. The herb with its leaves folded looked quite different from the plant seen in the daytime.



Adipera

Stebbins, R.

1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Nov. 10 This morning the generator of our cook stove failed. It had been working improperly for sometime. Unfortunately we had been unable to carry a replacement since we were unable to find one in Bogotá. Rather than resorting to meals in the native restaurant, we decided we had best return to Bogotá. We had planned to go to Honda, N in the Magdalena Valley, at the beginning of the tropical zone but this plan had to be abandoned.

Our trap line yielded nothing. It had rained during night, knocking down our toilet tissue markers, making the traps rather troublesome to find. John, Persio, and Paulino spent a good part of the day skinning the caiman shot last night. The animal proved to be a female, heavily laden with eggs. I measured & counted the eggs, examined the stomach and made some sketches of the lingual valve that closes of the trachea & oesophagus of these animals.

While I was writing color notes on animals collected last night, Paulino appeared with 4 or 5 punctures in the skin of his left hand. He had put his hand into the mouth of the caiman to see if a spine that projected from the underside of the throat

Stebbins, R.
1950

Journal

Villavieja, 1400 ft., Huila, Colombia

Nov. 10 penetrated to the mouth cavity. As he did this he tried to make Perico think the animal was biting him and ~~a~~ called to Perico for help but Perico readily saw that he was trying to fool him. A few moments later, probably stimulated by pressure of Paulino's hand on its tongue, the caiman clamped down. This time Paulino was seriously calling for help but aid was delayed because Perico again thought he was fooling him.

We shipped a considerable portion of our gear to Bogotá and packed the things that we were going to carry with us on the train tomorrow.

I walked to the place where we got the caiman and the anurans and took a photograph of the habitat. It was about 3:00 p.m. Stopped at the chapel to see if another Thecadactylus was present. There was none. Saw several Gonatodes. ~~and a young ?~~ ~~like snake like RCS~~ These lizards do not hesitate to expose themselves to full sunlight. I repeatedly have seen them in such situations.

This evening we visited at Paulino's home. His parents were most gracious. The family has the luxury of a phonograph. We danced

Stebbins, R.
1950

Journal

Villavieja, 1400 ft., Huila, Colombia & Bogotá, Colombia

Nov. 10 some native steps and attempted to teach our Colombian friends some U.S. steps.

We returned to our quarters about 9:00 p.m. and worked until 11:00 packing our gear.

Nov. 11 Today we travelled by train to Bogotá. We left Villavieja about 7:25 a.m. and reached our destination at about 5:30 p.m. Enroute I took 2 color shots of the crowd at Espinal in the Magdalena Valley. John made a list of the vertebrates we have encountered and obtained native names for many of the forms from Perico and Paulino (See J. Hendrickson's Journal).

Nov. 12 Spent most of day resting. Both John and I are suffering from digestive troubles, Hendrickson with diarrhea and I with heart burn.

Nov. 13 Another day of rest. Hendrickson seems to be all right now. I am still having stomach trouble.

Nov. 14 Visited the Natural History Institute today. Met Dr. Borrero. He had been recently to near Girardot at Tocaima on a hunting trip. He got 30 ♂♂ & 10 ♀♀ Colinus cristatus. All males had enlarged testes and all females enlarged ovaries and/or oviducal eggs. One flushed female dropped an egg in flight.

Stebbins, R.
1950

Journal

Bogotá, 8200 ft., Cundinamarca, Colombia

Nov. 14 Borrero's trip was Nov. 11 & 12, 1950. At same time and place, in clearing of 4 hectares of land, found about 14 rattlers, 2 eyes and 2 corals.

Dr. Osorno aided us in identification of some of our Magdalena Valley specimens. The following tentative identifications were made: The Microhyla-like form appears to be Elachistocleis ovale or E. pearsei if two species are recognized. The leptodactylid with the dorsal stripe seems to be Leptodactylus raniformis. The unstriped small leptodactylid may be L. diplichus. The small, orange Hyla with the voice suggestive of Acris gryllus seems to be ~~Microhyla~~ Hyla microcephala. Species obtained on the hillside above Bogotá were tentatively identified as follows: Phyllobates subpunctatus, the tadpole carrying frog: Atractus crassicaudatus, the small gray snake with orange markings. The only other local snakes are - Leimadophis bimaculatus and L. lamoni.

Osorno told us we could get Phenacosaurus and Leiocephalus at Usaquén north of Bogotá.

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Nov. 14 John, Paulino and I went up on the hilly terrane below Monserrate mountain above the city. I wished to see if *Phyllobates* was still breeding and to get live adults and living *Oedipus* for color notes. The sky was overcast, especially near the E mountains. When we got near the pool where *Phyllobates* had been found Oct. 15, it began to rain. We took shelter in a tunnel of sandstone that had been punched through a narrow ridge. We listed ~~[illegible]~~ to and wrote notes about a calling *Phyllobates* that was under the yellowish rocky & soil debris below the sandstone arch. We had mixed hail and rain for about 15 minutes. When the storm let up, we went to the pool and found 4 *Phyllobates* carrying tadpoles. The pool was higher than on the 15th of Oct. We then hiked ¼ mi. to a ~~eu~~ eucalyptus covered hillside where there was a large gap among the trees that opened to the W. Here we had excellent collecting. We got 2 *Anadia*, 1 *Leiocephalus*, many *Oedipus*, several Hyla-like frogs, 1 *Leimadophis*, 1 *Atractus*. For a description of this area, see the *Anadia* account, this date.

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Nov. 14 A ditch below the clear area, about 15-20 ft. across, carried a stream of muddy water about 6-8 ft. across. We return to our hotel about 6:00 p.m. This evening Perico and Paulino joined us at dinner at our hotel. We are letting them go as we have arranged to work on our own at Villavicencio. John has taken them to the theatre this evening — a farewell party.

Nov. 15 John reports the results of the theater trip — both guests fell asleep. Wrote color notes and took photographs. Set up camera in court of hotel. Photographed *Phyllobates* with tadpoles in place, small *Hyla*-like frog gotten on hill above Bogotá, & *Oedipus*. Spent most of afternoon studying anesthetized *Phyllobates* and adults & tadpoles.

About 3:30 p.m. Perico and Paulino arrived and we went out to the Ciudad Universitaria. W of the Servicio buildings, we found scattered pools in grassy pasture land. Here we collected and studied *Hyla labialis*. Several large choruses were underway, volume increasing toward nightfall. As with every day since our return to Bogotá, there were many clouds and it sprinkled lightly for a short time. We obtained ~~about~~ 2 dozen frogs, 3 or 4 of which were females.

Stebbins, R.
1950

Journal

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 16 Spent day writing notes. John & paid Paulino & Perico and changed money. Met a Mr. Edward Perry who lives in New Jersey. He has travelled all over South America. He had been out 21 months and expected to be out about 6 more. He is an electrician; he worked in Greenland during the war. That is where he made his money. He is a man of about 50, evidently single. He has the room across from ours in the hotel.

Nov. 17 Packed for trip to Villavicencio. About 10 a.m. hiked up on hill where we have done our collecting at Bogotá. Took color and black and white shots of Phyllobates habitat and place where we got Anodia, Oedipus, etc.

Left for Villavicencio at 2:35 p.m. in a 2 engine ship. Plane circled portion of Bogotá plain to gain altitude, then headed over eastern mountains. Many clouds but ground often visible. Trip took 45 min.; we arrived at 3:20 p.m. As we descended the pass over the mountains, heavily forested slopes were common. The vegetation looked like wet jungle. Over the Llanos could be seen several rain storms. The country is flat as far as one can see. The town is near the base of the hills. There appears to be much unmolested country near it.

Stebbins, R.
1950

Journal

Villavicencio, Meta, Colombia

Nov. 17 We ~~road~~ rode into town in a bus. The airport is on one side of the Rio Negro, the town on the other. They checked our papers, passports, university letter, etc. at the town. We went then to the hotel Meta — modern, clean, reasonable — $14 (pesos) per day, per person. It rained hard for about 5-10 min, about 4:15 p.m. This evening we took a walk about town; streets were dry except for few small puddles. We had a letter from Dr. Pichter to the manager (or owner?) of the hotel (Don Alfredo Lopez). We are given special consideration.

Nov. 18 Went to the security office for registration. The town has been troubled by incendiaries. A whole block had been burned out. After inspection, we caught a ride with an army vehicle and rode about 12 km. SE Villavicencio to the army post. The army received us most graciously. Learning of our interest in herps., a recently killed snake (Lampropeltis - like - red-black + white banded) was produced. It had been found under a door step grate where it had apparently sought shelter from a hard rain the night before. We also were given a dead Leptodeira (?) (JRH 1563).

We were told that this was the beginning of a dry period and that the recent hard rains were rather unusual. From now until April will be the "dry season". May and June are wet and

Stebbins, R.
1950

Journal

Villavicencio, 500 m., Meta, Colombia

Nov. 18 during these months most frogs are heard. On the way out to the post, our driver said that wild dogs, anteaters, and deer were seen crossing the road at night. Evidently the anteater can be dangerous. A man had his groin torn open by the foreclaw of one of these animals. We asked about monkeys, tapirs, tigers, etc. They occur farther out on the Llanos (= swamp lands). We learned that we could buy young monkeys for 3 to 10 pesos. One makes his wishes known at the market place and in a few days monkeys are brought in.

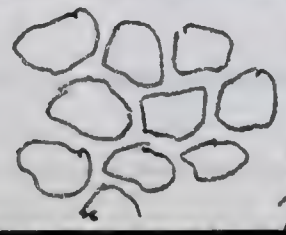
There was to be a "milk run" by air out to Trinidad on the Llanos of the Rio Meta drainage which is tributary to the Orinoco. We were invited. We boarded a 2 engine plane like the one that brought us to Villavicencio. We had made friends with the pilot (Teniente Gustavo Castillo) and copilot (Teniente Horacio Riveros) at the officers quarters. They allowed us up in the piloting compartment and when well underway, the copilot gave John his seat. From this position we had an excellent view. The plane flew low and rather slowly, 900 to 1600 ft. and 140-150 miles per hr. In the main there was little haze but much of the sky was overcast and we passed

Stubblins, R.
1950

Journal

Villavicencio to Trinidad, Colombia

Nov. 18 through 2 or 3 brief rain storms. The first part of the trip took us parallel (more or less) to the Rio Meta. We saw extensive tracts of heavy jungle ~~growth~~ with intervening stretches of green grass-like growth for a time but presently the open, treeless stretches began to predominate, with only scattered patches of jungle and threads of tree growth along drainages. There was much water. Standing, shallow pools were everywhere. Depth of one was suggested by a cow that stood with water to her heels. This pool was about 200 ft. across. Water that comes from the abrupt ~~western~~ eastern face of the Andes passes out onto the flat plains country. This water is mostly carried by the meandering to nearly straight NW-SE tributaries of the Meta. Some of it may, along with rain water, form the standing pools. ~~Sto~~ Some of these pools seem to be bayou-like in formation — they are crescent-shaped. In many places, both wet and apparently dry, is "sural" formation. This consists of hummocks 3-4 ft. high (probably also lower & higher) with intervening channels. The hummocks are covered with cane or grass-like growth.



sural formation

- THE LLANOS -

Stebbins, R.
1950

Nov. 18

Villavicencio, Meta to Trinidad, Boyaca
Colombia

The Llanos

Palms (wetter areas ?).

Broad crown trees

Vines

Great variety of tree species.

Character of Jungle
(Drawn from memory)

"grass" roof

white washed (?) adobe walls.

Native house
(Seen in flying over Llanos - drawn from memory)

Stubbins, R.
1950

Journal

Villavicencio, Meta to Trinidad, Boyaca, Colombia

Nov. 18 The stretches of jungle are composed of many different kinds of broad crowned trees. Among them are palms of several types as suggested in the illustration (prepared from memory). Here and there a clearing appears with one or more "grass" roofed, adobe walled huts. Usually a banana patch appears as a break in the jungle cover. Two kinds of jungle trees were observed in bloom — one with orange blossoms (the most common), the other lavender.

Fires were frequently seen. They are deliberately set to produce good forage for cattle (so our pilot says).

Besides cattle, pigs, and occasional horses, we saw wild life — several flocks of flamingos (?) — long necked, orange-pink birds, white herons, deer. The deer darted about in an erratic manner, frightened by the low flying plane.

We flew low over Trinidad. Soldiers & townsfolk lolling in the town square leaped to their feet as we passed. Most of the buildings have "grass" roofs. We flew N of town and then in a banking turn doubled back, I believe, west of the town where we landed on Avianca (army?) air strip. A native hut stood on the E side of the strip. John and I

Stebbins, R.
1950

Journal

Villavicencio, Meta to Trinidad, Boyaca, Colombia

Nov. 18 spent about 1½ hrs. looking for herps. along the E side of the landing field. We worked from around 2:30 to 4:00 p.m. I noosed a Cnemidophorus lemniscatus and attracted by its cries, we found a leptodactylid. It had evidently been seized by a snake. The skin of one hind leg was torn and I caught a glimpse of a reptilian tail disappearing into dense foliage. We come upon a large dead Ameiva (?), probably Tupinambis, over 1 ft. in snout-vent length. It was too far gone to save. We saw and tried to catch several smaller Ameiva but failed. Crotophaga major was seen & heard as was the kingbird with the white supraorbital stripe and rusty back. The quail collected in the Magdalena Valley was heard. Before landing I had seen a flock of Crotophaga (either ani or sulcirostris). They were too far below to tell.

We returned to Apiay, skirting the foot of the mountains. We ran into dirty weather requiring the attention of both pilots. I ~~also~~ went aft and strapped myself to the side wall seat as did the other passengers (4). John remained at a seat in the pilots compartment. We flew through a rain storm during about the last half of the trip. Visibility was reduced but at no time was the ground out of sight.

Stebbins, R.
1950

Journal

Trinidad, Boyaca to Villavicencio, Meta, Colombia

Nov. 18 In a few places we had a little bumpy flying. We arrived at the base about 5:30 p.m. It was raining hard.

Shortly after 6:00 p.m. the army truck took us into town. We were packed like sardines in the canvas-covered back of the truck with some 14 Colombian officers & men. Enroute to town, noted a few fireflies and heard Hyla microcephala choruses at several stops.

The army has given us a safe conduct pass to the environs of Villavicencio. Its personnel has been most friendly. The major who met us at the base was Eduardo Muñiz-Harker. A captain, whose name I did not get, promised to put a squad of men on a boa hunt for us. He says his men don't have enough to do. We also met a subteniente Luis Carlos Muñoz. The Coronel, who we were to see (We had a letter of introduction from Dr. Pichter to him) was in Bogotá — his name - Pedro A. Muñoz

Dr. Julian Zuluaga, acting director of the Institute of Tropical Diseases ("Roberto Franco") came to see us about 7:30 p.m. We had a most pleasant visit. He invited us to the Institute

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 18 and told us about the "Macarena Project." He offered us a plane trip to the Macarena Range, an untouched area about 80 miles S of Villavicencio. We will go on the 25th and stay about 3 days at the Institutes expense. The Institute is trying to promote "pure biological" research as well as applied, in the Macarena Area. The region has recently been set aside as a natural preserve and research area. It is the desire of the Institute to bring scientists from the United States (or elsewhere) to work in the area. It will take care of all expenses beyond those incurred in reaching Villavicencio. It wishes particularly to promote long term population studies — a year or 2 in scope, but is also interested in ~~the~~ shorter taxonomic ~~surv~~ surveys. For details see correspondence file this date, under Zuluaga, Julian.

Nov. 19 Visited the Institute this morning. Dr. Zuluaga, a tall, thin, dark haired & dark eyed man, showed us about. He showed us field equipment for studying mosquito ecology — recording hygrometers, thermographs, surface tension detector, maximum-minimum thermometers, etc., etc. We visited breeding rooms for ~~yellow fever mosquito and~~

Stebbins, R.

1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 the local malarial mosquito, Anopheles darlingi. The larvae are hardy. They are fed pulverized dog biscuit + yeast. Mating in captivity is sometimes difficult to achieve and ~~egg laying~~ copulation is sometimes stimulated by use of ultraviolet or just blue light. Perhaps we should try this on amphibians. The collared peccary is used as a blood supply for the ~~yellow fever~~ mosquito females; ~~raisins~~ + bananas for the males. The peccary is used because it is clean and deposits little fecal material. They "seem to digest everything they eat." The breeding cages were surrounded by a water moat to keep out ants.

Julian Zulueta is interested in fluctuations in population density in the malarial mosquito. Larvae are continuously highly viable; it appears that fluctuations may be largely base on varying egg viability.

DDT is effective in buildings but the mosquito does not stay indoors. It comes in, bites, and leaves. Native huts are often nothing but a roof supported by poles, hence few mosquitoes contact spray. Since using DDT, there has been little change in the

Stubbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 incidence of malaria. Control by eradication of breeding sites is not feasible.

Zulueta told us that there was little chance of contracting malaria at this time of year. If one was indoors by 6:00 p.m., bites were nil.

He showed us skins of rodents, bats, birds, ~~and~~ a variety of animals that had shown evidence of yellow fever infection.

In cages about the laboratory building are kept a number of animals – Boas, monkeys, peccaries (2 kinds), opposums, etc. Zulueta, upon learning of our desire to get a monkey, told us we could have his – a saimiri or "titi" monkey.

He gave us some of his separates. Two ~~that~~ others appeared interesting but ~~of which~~ he was about out ~~one~~ of these –

① Zulueta, Julian de and Bates, M.
1948 Laboratory experiments with selection of oviposition site by *Anopheles darlingi*. Amer. Jour. Hygiene, 48(3): 350-360.

② Bates, M. & Zulueta, J. de.
1949 The seasonal cycle of anopheline mosquitoes in a pond in eastern Colombia. Amer. Jour. Trop. Med., 29(1): 129-150.

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 Zuleta referred us to a good book on the area: Bates, Nancy Bell, East of the Andes and West of Nowhere, Charles Scribner's Sons, New York, 1947. (A naturalist's wife in Colombia).

After our visit we hunted the area around the laboratory. A skink-like lizard and several Gonatodes-like lizards were seen on a round topped incinerator in a bamboo patch in the back yard. The incinerator was in a pole-supported, open building. Along a mud bottom ditch bordering the E side of the property, I found a number of anolis-like lizards and saw an Ameiva that ran down a hole. I probed 1½ ft. into hole but he did not come out. Grass & stick jams in ditch indicated high water at times. The ditch had bare sloped banks, was about 3 ft. deep & 6-8 ft. across at the top. An open grassy field lay to the E and brush & tree growth to the W. The bottom of the ditch was wetter than its surroundings.

In an area N of the laboratory were patches of vines, low growing trees (second growth?) and brush, with grassy paths permitting penetration of an otherwise

Stebbins, R.

1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 almost impenetrable area. A Cnemidophorus was seen here, near a puddle and John got two Ameiva. I saw an anole-like lizard. I caught several butterflies with my amphibian dip net.

I returned about 2:30 p.m. and shot a skink on the lower branch of a bush, about 1½ ft. above ground, on the W side of the ditch. I caught one anole-like lizard with my dip net. It was in the ditch bottom.

The sky was overcast much of the time and lizards were not found so I turned my attention to a flock of Crotophaga ani. Of about 15 birds, I shot 4, sexed them, checked condition of gonads & molt, and discarded the carcasses. The birds were found in the field E of the Institute. I heard the spine-tail (collected in the Cubatana area) and the kingbird with white line over the eye & rusty back. About 30 black vultures were seen roosting in a large, broad-topped tree, about 75-100 ft. high & as wide a crown.

Returned to hotel about 4:00 p.m. About 5:00 p.m. it rained. John & I went out about 9:00 p.m. and collected frogs. We got 6 or 7 species — and heard what we thought was Microhyla.

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 We worked an open field NW of the Institute where there were a number of rain pools. Here we got *Hyla crepitans*, a leptodactylid and heard the *Microhyla*(?). We walked 100-150 yds to N to a stream where we got a number of ranas and saw 3 young caiman (?) – red eyeshine, total length about 2½ ft. John tried to noose one but failed. At a rain pool N of the stream we got a number of *Hyla crepitans*, *Hyla microcephala*, a leptodactylid, and a dendrobatid-like frog. All were found in grass & bushes around the pool except a *Hyla crepitans*. Some amplexian eggs were seen near the pool margin. It was a moonlight night, ~~warm~~ mild and with slight breeze, refreshing after the rain. We returned to our hotel at 12:00 midnight.

Nov. 20 Visited the market place in the E part of town. No monkeys. Went to Instituto. Dr. Zulueta has arranged for us a car and Colombian assistant, free of charge. The Colombian is Carlos Velasquez. He has been out with a scientist from the U.S.N.M., hunting "sapos". He described getting frogs with yellow markings. He will be of great help to us in finding animals. We will go

Stibbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 20 tomorrow up the road to Bogotá, into the mountains. Tonight Carlos will hunt frogs while John & I work on study of voice of frogs gotten last night.

Hector Acebes, his wife, and daughter (the parents speak good English & Spanish, the little girl only Spanish) were photographing Zulueta's boas. John & I found ourselves posing with the 8 ft. snake draped ~~on~~ around our necks. Later, Mrs. Acebes, a fair skin, black haired, thin waisted Bostonian of French (?) descent was similarly posed. She rapidly overcame her timidity. By holding the smallest boa ($2\frac{1}{2}$ ft.) up to the "titi" cage, a whimpering chatter was induced as the two monkeys viewed the snake with alarm.

Acebes knows the story behind shrunken human heads. The Indians open the scalp and remove the bone, then sew up the skin. Hot sand, and later hot rocks are dropped in through the neck opening. Rapid drying shrinks the head. He says there are no head hunters now in Colombia. He has gotten shrunken heads from Ecuador. In SE Colombia, they do still eat people. Head hunting & shrinking is a feudal practice and the heads are kept as

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 20 trophies. Aceba had not heard of the use of dendrobatid poison for poisoning arrow tips for killing monkeys.

Returned to hotel at noon and spent afternoon writing notes. It rained a little between 3:30 & 4:00 p.m. Short electrical display.

Nov. 21 Carlos Velasquez arrived about 8:00 a.m. We loaded our things into a taxi and took off up the road to Bogotá. About ½ mi. air line from Buenavista we stopped to look for herps. We worked along the creek in the canyon bottom (Caño ~~Parado [Parado]~~ Maizaro?) and along some of the small tributary canyons. The main canyon has obviously been subject to high water. There is much loose rock and no plant growth. The stream was about 10 ft wide. I found only one small frog under a stone at the bottom of an abrupt bank, along the main canyon. I fared better working a NW-SE tributary gullay on the N side of the main stream, about 150 ft. from the road. The angle of the bed was about 45° but there were nearly horizontal stretches & some steeper places. The water cascaded along the steep parts and formed pools in the levelier areas. The brook was about 1-2 ft wide. There

Stebbins, R.
1950

Journal

Villavicencio to Buenavista, Meta, Colombia

Nov. 21 were many large rocks and the banks were nearly concealed by a thick tangle of vines and predominately broad-leafed plants. I turned rocks along the stream and pulled them out of the banks. I found a freshwater crab in a trickle under a rock; saw daddy long legs, earthworms, spiders, millipedes, centipedes, beetles, ants, flatworms (land planaria?).

I found a small frog under a stone a few feet from the water's edge and up stream about 20 ft. (Hyloxalus granuliventris) another larger species about 1½" snout-vent. This one was found under rocks almost behind a cascade. An egg cluster, possibly of this frog was found a few feet away, under a rock in a damp situation. The habitat here reminds me of the niche of Ascaphus truei of western North America.

Carlos came by and said the taxi was running into money and that we had better go on to Buenavista. We wound our way up the mountain about another 1000 ft., to a small group of tin-roofed buildings at the crest of the hill. This was Buenavista, 4000 ft. It looked E out across the llanos and on Villavicencio at the foot of the mountains, directly below. To the W the narrow white thread of the road to Bogota cut the canyon walls. There are many patches of cut timber, providing pasture land in what was originally dense forest.

Stebbins, R.
1950

Journal

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 The ridge on which Buenavista is situated runs roughly N and S. and is such pastureland. The slope to the W is original forest but much of the E slope, except along the canyon bottom, is second growth.

We left our two animals from the previous stop with a boy at the Buenavista ranch house, and then headed S through the cattle yard. We hiked our meadow land for 100 yds and then entered the thick forest cover of the W slope. We worked our way down this slope about 100 yds, rolling rocks, logs and digging in the leaf litter. The slope was about 60°. We found no herps. except a couple of tiny frogs in the axils of a banana-like plant.

The forest was very dense, making it difficult to get through. It was a constant twilight situation. There were many vines and epiphytes. The trunk and branches of some trees were completely covered by the latter. There were many roots holding together the decayed litter of the forest floor. This material was damp but not wet. Finding so little, we retraced our steps up the steep slope. This was not difficult because of the many hand and footholds afforded by the abundant plant growth.

Upon leaving the forest we worked S along

Stebbins, R.
1950

Journal

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 the ridge, following a rocky cowpath through pasture land. We turned rocks as we went. Along the path, about 100-150 yds S of the ranch house, I ~~we~~ got 2 Leptodactylus ocellatus. I heard Synoallaxis and Crotophaga ani.

Along a gully further on, that drained to the NW, I got an odd-looking bufo and a small frog. In a vine-like bush, I caught by hand, a teiid-like lizard. John had earlier found what seemed to be the eggs of this species, under a log.

After lunch and a siesta, lasting until 1:30 p.m., I hiked to the crest of a small hill, where there was a marker. Here several photos were taken. SW of this hill, about 150 yds. away I walked about a small reservoir. Here I got several kinds of frogs & tadpoles.

About 3:00 p.m. I worked my way around the hill with the marker down into a N-S canyon that possessed a stream that flowed N. The canyon was heavily forested. Like the forest visited earlier, there was a constant twilight. Near the canyon bottom, I encountered a water filled ditch, about 1½' across. I followed this to the ranch house, turning rocks, logs, and other litter. This water comes from the stream and is probably the drinking water, etc. for the ranch. The water moved quite rapidly.

Stebbins, R.
1950

Journal

Buenavista to Villavicencio, Meta, Colombia

Nov. 21 The canal was situated in a swath cut through the forest, a swath about 10-12 ft. wide. A number of *Hyloxalus granulicentris* were found along the canal. Several times along the ditch I heard a prolonged, rapidly uttered (stuttering), ~~clear~~ clear whistle. I took this to be the fore-mentioned species. Near the ranch house, John and I were able to determine that this form gave the call. We arrived at the ranch house about 5:00 p.m. During much of the day the mountain tops to the W had been in clouds but where we were, the sun shone and there were only scattered clouds over the llanos.

About ~~Villa~~ Buenavista we heard *Synallaxis*, *Crotophaga ani*, and saw possibly *Stelgidopteryx*.

We rode a truck into town.

Nov. 22 Spent day writing color analysis and photographing specimens. The following photos (in color) were taken:

Leptodactylus ocellatus	- JRH 1573
L. fuscus pseudopaeus	- RCS 5064
Rana palmipes	- RCS 5062
Hyla septentrionalis	- JRH 1570-71
H. microcephala	- JRH 1574-75 RCS 5066
Bufo marinus	- RCS 5067
Anseria	- JRH 1566.

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 Went out this evening to work on voices of frogs species obtained the 21st. It had rained for about 15-20 min. late in afternoon but things had pretty well dried off. Worked along stream S of town from 8:20 to 9:00 p.m. I got one Hyla crepitans and heard Leptodactylus knudsei pentadactylus. John noosed a young caiman, using a fine wire noose. I returned to the hotel early because my head lamp failed. John and Carlos stayed out until about 11:00 p.m. John shot 3 caimans, none of which he was able to get. Frogs were not calling well; probably things not wet enough.

Nov. 23 Carlos, John, and I took a taxi S of town to the Ocoa River, 5 kms. S. During the course of the day, we worked along the river to about 1 mile to the E & back. Near the road was a stretch of cut over land with weed growth, on the average, to about 6-12" high. There were many standing stumps, brush & logs. A cane of some sort margined the river to the S. In this area we got many Anoura and Cremnodonus lemniscatus, the latter more common in the open, less weedy growth. We shot both forms for temperature records. The animals were often difficult to see because, they threaded their way among the

Stebbins, R.
1950

Journal

Villavicencio, 1600 ft., Meta, Colombia (5 kms. S)

Nov. 23 weeds. Carlos guided us to a patch of jungle to look for a frog with a yellow back. Enroute John found a red & yellow marked frog under a palm log in an area near the river in a palm grove. In the section of jungle, we found little but mosquitos & other insects. I shot a couple of Ameiva but they were all I got.

We then followed a jungle path to open pasture land. Along the path we got additional Ameiva and Chironius, a orange brown snake, and several frogs. The path provided an "edge" situation. Carlos said that when the river was high, the water stood on the jungle floor to 1-2 ft. deep.

In the pasture we found pools with a few tiny frogs which we could not catch. We shot several Crotophaga ani and heard Synallaxis in brush clumps.

We walked to another stretch of jungle, where we heard monkeys. Here we ate lunch and had a fitful siesta because of the mosquitos. Carlos shot a "titi" monkey and several large parrots. I got one of the yellow & red frogs in a rotting log.

John and I took a swim in the Ocoa River, learning later that there were fresh water sting

Stebbins, R.
1950

Journal

Villavicencio & Villavicencio to Macarena, Meta, Colombia

Nov. 23 rays in this river and they like sand bars. We had been sitting, in the nude, on a sand bar.

About 2:00 p.m. I started back toward the road. At the cleared area, near the road, I shot more Cnemidophorus & Ameiva. Just before reaching this area, I passed through the section with numerous palms, where John got the red & yellow frog. It was considerably cooler here than elsewhere. I took photos of the river & the cut area where we did the lizard thermal work. About 5:00 p.m. we caught a ride on a "platano" truck into town.

Nov 24 Spent day writing notes. Took color photograph of 3 Phyllobates rubrus, RCS 5118-19 & JRH 1602. The first picture was taken in bright sunlight; the second in the shadow of my body. Rained hard just after dark. Gutters running high. Rain lasted about 3/4 hr.

Nov. 25 Today we flew to the N end of the Cordillera Macarena. Mr. Cardonez, an administrator for the Roberto Franco Institute, arranged the trip for us. Dr. Zuluta had gone to Bogotá to look into the matter of getting an American made helicopter for facilitating biological investigations in the Macarena. Many parts of the Macarena have not been explored. There are no trails for horses or pack animals. The plan is to clear a patch

Stebbins, R.
1950

Journal

Villavicencio to Macarena Range, Meta, Colombia

Nov. 25 of jungle on top the cordillera. This would open up much more of the country to investigation.

An aerotaxi was hired for our trip. There were 4 of us (+ several hundred pounds of luggage), Mr. Cardonaz, John, the pilot, and I. We left the airfield at Villavicencio at about ~~11:45 a.m.~~ 12:10 p.m. We skirted the foot of the Andes, flying south across the headwaters of the Rio Meta and then the Rio Guaviare. It was a 4-seat plane. I sat up front with the ~~pilot~~ pilot to take pictures. We flew at about 135 mi. per hr. at an elevation of about 1300 ft. I took a photograph of a river & jungle, looking W, just before we passed Acacias. This was probably the Rio Acacias or Rio Guayuriba, most likely the former. Another photo was taken of the S edge of the Mesa de Yamanes (Rio Guape), just before reaching the Macarena. As we approached the Macarena, I took a picture, (looking S), of the N escarpment.

Much of the country appeared as did that seen in the first part of our Trinidad trip. There was, however, more jungle. In places a solid sea of green could be seen with only a small scar here & there with a native hut, its center. Yellow & lavender blooming trees were occasionally seen. Bananas and palms of several sorts were mixed with the other trees.

Stebbins, R.
1950

Journal

Villavicencio to the Macarena, Meta, Colombia

Nov. 25 As we approached the Macarena, we flew over llanos with jungle along stream courses, as on Trinidad trip. The dense forest of the earlier part of the flight was largely left behind at the mesa, previously mentioned. Much of the mesa top was evidently naturally clear land, grassland. Several grass fires were burning to the NE as we approached the Macarena.

We landed at 12:40 p.m., about 3 mi. S of El Mico, the ranch. The Macarena is a much dissected plateau. The canyons are precipitous and much of the area seems to be covered by forest. The E side is fringed by an E dipping grass-covered foothill area that seems to be set off from the Macarena proper by a canyon. The sketch on the next page may suggest this relationship. It was made looking W, from the ranch house.

John caught an anole-like lizard in the grass at the air strip but it was later lost. The Bob-white-like quail was calling. It sounds like the same species collected in the Magdalena Valley.

After lunch we rested for a time in the shade of the airplane wing. Shortly 2 Colombians appeared & helped us with our luggage down to a small grass hut near a clear mountain stream that ran through dense jungle. It was a

Stebbins, R.

1950

Nov. 26

Macarena
Cordillera, Meta,
Colombia.

MESA YDROBO

(Viewed from Rancho El Micó, looking West)

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 25 truely beautiful spot. There was a waterfall about 10 ft. high, many broad leafed plants, broad crowned trees with tall, spindly trunks, numerous epiphytes, trees with prop roots, lianas of tremendous length, some 50-75 ft. long and 2" thick.

About 2:30 p.m., John and I took a stroll along a recently cut jungle trail about 15 ft. wide. The trail ran S, following the stream. We were both impressed by the scarcity of reptile & amphibian life. We saw several anole-like lizards, a teid-like lizard, resembling the one I got at Buenaventura. We shot one of the latter. We got several frogs, one bird with beautiful blue & yellow markings. Two water snakes were taken at the stream banks near where it joined a large, fast flowing river that flowed NE. The path went through jungle except for a short section, about 150 yds. long, that passed through a bunch grass, rocky meadow. Here the Institute of Tropical Descanso plans to build a laboratory for the biological work in the Macarena. At the edge of this meadow we came upon a flock of about 10 Crotophaga ani. A number of butterflies were seen, a large snout beetle about 1½" long, many ants, which could bite & sting violently, few mosquitoes, termites (one with soldiers with jaws like a scissors). One of our Colombian friends met us on the trail and

Stebbins, R.
1950

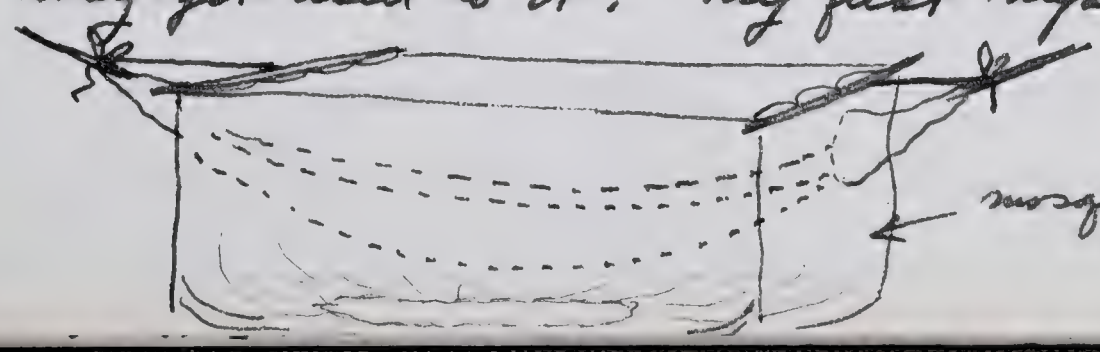
Journal

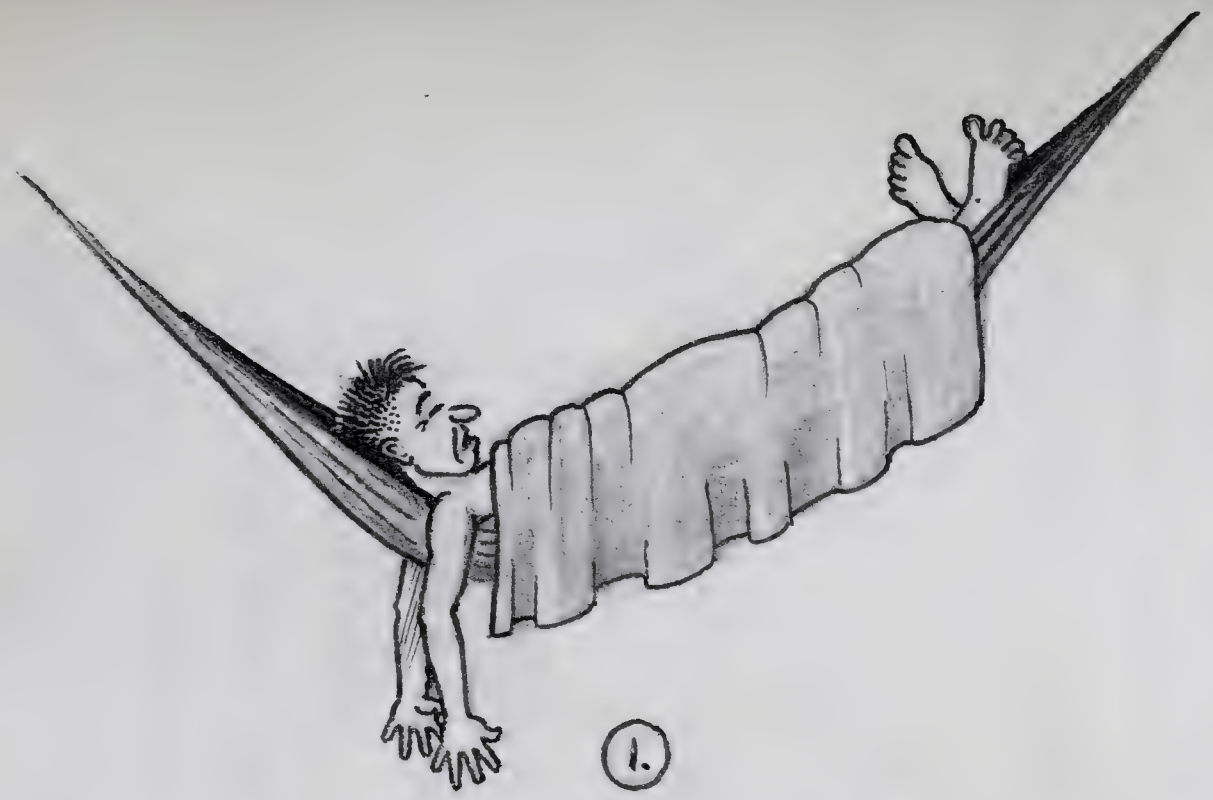
Macarena Cordillera, Meta, Colombia

Nov. 25 accompanied us to the hut where our luggage had been deposited. The camp was empty & nearly all our baggage gone. The other Colombians had gone to the ranch. Three saddle horses were waiting for us, so we mounted road to the ranch. Two more photographs were taken, one of John in the grassy area with jungle background, looking SW toward the Macarena; the other of myself, horseback, with high bunch grass surroundings.

After supper (about 7:00 p.m.) we went out to a nearby spring and small stream to look for frogs. A Colombian lad from the ranch, guided us. Many crickets were heard but I heard no frogs and saw only one, which I missed. It looked like *Leptodactylus obscurus*. I dipnetted a turtle from the small stream near the ranch water supply. This water source is about 2 blocks W of the ranch house. The ranch is situated in grassland except for jungle strips along water courses, as at the ranch water supply. We learned that there are many kinds of monkeys here — spider, titi, howler, etc. The tapir is present. Toucans were heard. Sloths & anteaters are present.

Tonight I slept, for the first time, in a hammock. I may get used to it. My first night was fitfull.





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— GRINGO SLEEPS IN HAMMOCK —

R. Stebbins
Mus. Vert. Zool.
Univ. of Calif.
Berkeley, Calif.

Stebbins, R.

1950

Journal

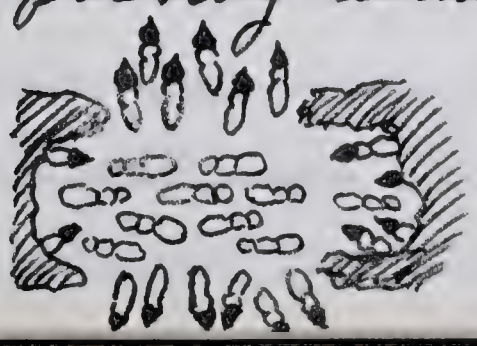
Macarena Cordillera, Meta, Colombia

Nov. 25 Unfortunately we are here at a bad time for amphibian work. It is the beginning of the dry season.

Nov. 26 Wrote notes most of day. Our Colombian friends slaughtered a pig this morning. Killing was done with a single jab of a knife at the side of the trachea, cutting into it and the carotid artery. After a few minutes the wound was reopened to removed clotted blood. The pig was dead in about 5 min. Hair was removed with a large knife following drenching of the skin with scalding hot water.

On a walk to the spring, I saw a blue gray bird which I shot. The skin was prepared with toilet tissue body covered by a thin veneer of cotton. We did not bring adequate materials for bird work.

In the late afternoon I noted a broken termite tunnel across the path (path about 10" wide). All was destroyed except about 1" of tunnel at either side of the path and a few small remnants ~~=~~ between. ~~Nasu~~ Nasute soldiers were grouped on either side of the broken segments with the workers passing between them (see sketch). Workers were briefly repairing the damage. By nightfall they had added ~~any~~ inch or so to either



Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 26 side of the tunnel. The next morning, there remained about 4" of tunnel to complete. I thought the work would be finished the next night, with the soldiers standing guard through the day. I was mistaken. By evening of the 27th, the tunnel was done. The freshly built section appeared darker than the rest. Soldiers greeted workers with vibratory movements of the forepaws and workers also ~~made~~ made these movements.

John and I went out about 7:00 p.m. for some night hunting. In the pasture 200 ft. SW of the ranch, we saw a wild dog. I had trouble getting my light on my gun sights and the dog at the same time. I finally fired rather haphazardly and the animal escaped.

In the small stream below the spring, we found a caiman about 25" snout-vent. After 3 shots we got the animal. In the field where the dog had been seen, I shot a large plover-like bird which calls shrilly at night.

Earlier in the evening, before taking our night walk, John ~~to~~ and I had attempted to locate what we thought were frogs calling from a seepage area below the spring. The call was much like that of Physalaemus pustulosus. I timed individuals as follows: 15, 11, 20 seconds

Stebbins, R.

1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 26 = duration of single calls. The call is on one pitch and is a prolonged stuttering whistle. We triangulated one caller and found a small frog, about 1" snout-vent. The animal was brown and had a whitish stripe on the upper lip. We did not see him producing the sound, however. The frog escaped. A grating crock, a little like that of *Hyla rugilla* was heard at the spring but we could not locate the singers, who called refractorily. Today I took a color photo of the ranch house.

Nov. 27 Spent most of morning putting up "plover" skin. Lack of sawdust, made skinning difficult. The baby at the ranch is infested with a fly(?) larva, called "nuchi". Large boil-like swellings have appear, one on his head (scalp), one on his chest, & 2 on his back. His mother showed me a larva which she had squeezed out. It was whitish, segmented, about 6-7 mm. in length & about 1½-2 mm. in diameter → . The child has a fever and whimpers a good deal.

This afternoon John and I walked down to the spring. We had shot at a racket-tailed hummer there yesterday and hoped to get another crack at me. The hummer was not around. The "whistling" frog(?) was calling again. We triangulated on him and found that the sound

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 27 came from the same places as yesterday but no frog could be found. I left John and followed the jungle-concealed river (creek, actually) for about 175-200 yds. below the spring. I came upon a group of monkeys. I shot one of the animals. The monkeys were unafraid of me. They probably had never been shot at before. I felt a slight twinge of regret after I killed the animal.
I saw a toucan and several oropendulas.
I skinned the monkey (a female) when I got to the ranch and tacked the skin to a tree.

Shot a pair of kingbirds, the species worked on at our Cerbetana camp in the upper Magdalena Valley. The skins were not saved but notes were taken on the reproductive organs and plumage.

Nov. 28 Rained last night. Checked monkey skin. I feared ants and the rain would ruin it. Few ants around the lips but skin not cut. Skin feels parchment-like, despite rain. Left it on tree. At 9:00 a.m. sky still wholly overcast. Much of Macarena concealed by low lying white clouds.

About 10 a.m. John and I decided to hike to the E-dipping foothill area that borders the eastern side of the Macarena proper. In reaching the crest of the escarpment, we passed through 3 stream border strips of jungle, with general

Stebbins, R.

1950

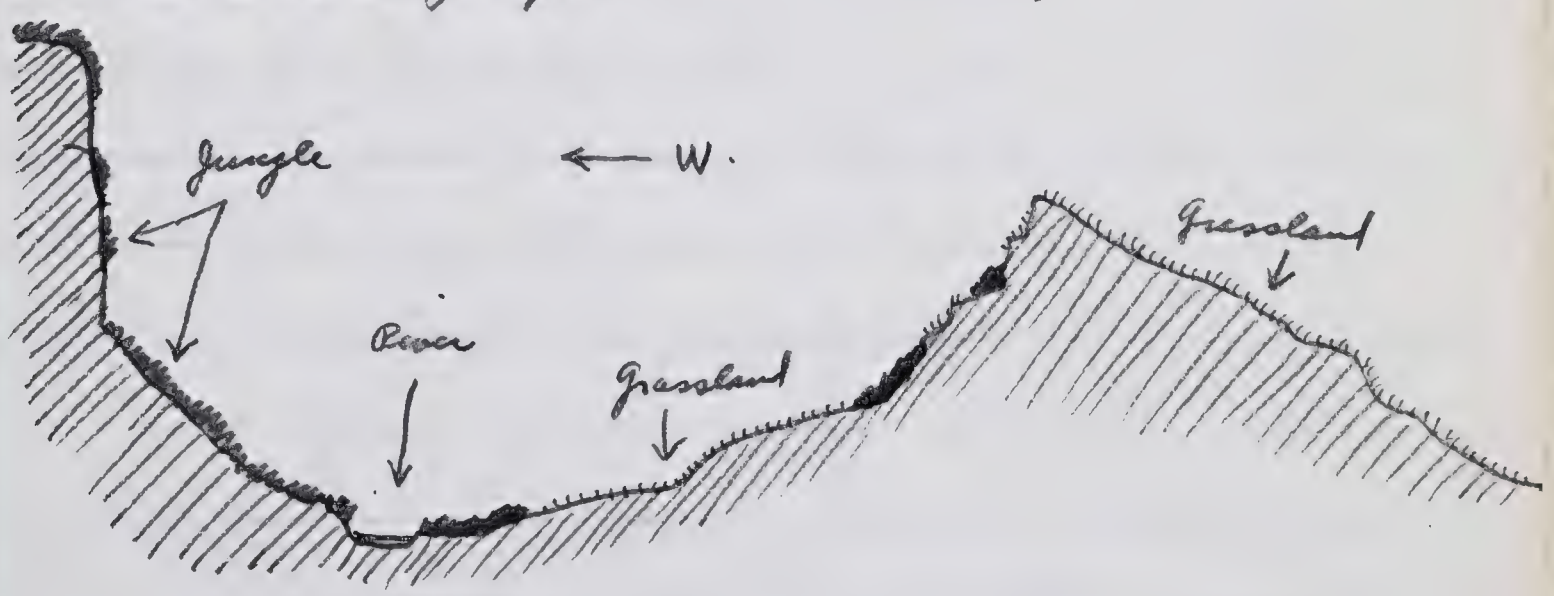
Journal

Macarena Cordillera, Meta, Colombia

Nov. 28 N-S orientation. The intervening areas were grassland. The grass tends to clump, is coarse and grass general 1-3 ft. high. It was green. Enroute we heard monkeys, saw meadowlarks, bob-white-like quail, Crotophaga ani.

We crossed 3 streams, the small one near camp, the other 2, about 30-40 ft. wide, clear and cool, farther on. The last flows close to the foot of the escarpment.

The escarpment superficially seems to be a rough, blackish lava. The W face is abrupt, the E dips at about 30°. A broad valley with a river lies between the escarpment and the Macarena proper.



When at the crest of the escarpment, we heard frog-like calls coming from the trees in a gully on the W. facing slope. There was a patch of dense jungle. We also observed what may have been an aplomado (Sp.?) falcon and 2 turkey buzzards. The latter seemed somewhat different

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 28 from our North American representative. They seemed to have a whitish ruff? a patch of whitish skin near the margin of the bare skin a feature on the upper surface of the neck.

On returning from the crest, we encountered ~~another~~ a striped Cnemidophorus-like lizard but it escaped. It was seen in the brush grass country at the foot of the escarpment, like that where a specimen was found earlier. John found the bony shell of Testudo denticulata on the escarpment.

We arrived back at camp about 5:00 pm. Dr. Fred Medem had arrived. He and a Colombian aid had been on a trip of exploration N of the N end of the Macarena. Dr. Medem is a Pole (Lattvian-Estonian?). He speaks or has some knowledge of English, Polish, Russian, German & French & Spanish and perhaps other languages. He is a man in his early 30s (?), a blond, gray-eyed, well-built Germanic type. He is greatly interested in the animal life of this region and is collecting a variety of animals — reptiles, birds, mammals, insects, etc. He has much information on the animal life despite the fact that he has been here only 5 months. He is severely handicapped by lack of publications.

He says the best time for frogs is in May, June, & July, judging from his experience around

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 28 Villavicencio. Both John and I have been impressed with the scarcity of both reptilian and amphibian life.

Tonight about 7:30 p.m. John & I went out to do a little night lighting. We saw the wild dog again in the nearby pasture. I shot at him but missed. John also fired but the dog ran off into the bushes. We worked in the patch of jungle near the spring. I saw a rodent (?) of some sort but it escaped. Only once did I hear an amphibian – the frogs at the spring. They did not call again. A sound resembling that given by a small orange-colored Hyla at Villavicencio proved to be a cricket. It sang with its wings elevated in a vertical position. We had hoped that the rain of last night & this afternoon would have stimulated amphibian activity.

Nov. 29 Spent most of morning talking with Dr. Medem. He is interested in a variety of animals but favors most, the mammals. About 10:30 I took a walk to the spring area where I found two lizards in the nearby jungle. I saw what appeared to be the cream striped frog with the red leg markings, that we got near the Orea River near Villavicencio. It escaped into a hole. I spent about 1½ hrs. turning logs, etc. in the

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 29 jungle floor but found nothing. I am continually impressed with the scarcity of herpetological material. About noon I left the jungle strip to the N and went out into the savannah. About 1/4 mi. to the N a rain storm was approaching so I headed for the ranch, arriving a few minutes after the rain. It rained all afternoon. We had planned to go to the woods to the E tonight but the rain continued. It rained all night and until midday the next day.

Nov. 30 I went out in the rain about 10:00 a.m. Most birds were quiet but I was able to shoot a reddish brown tanager-like bird. I came in & prepared it. In the early afternoon, several other birds were shot near the ranch. Later in the afternoon Carlos went out and got 2 toucans, a dove, flycatcher, cardinal-like species, etc. It cleared about 2:30 p.m. & took photos of the savannah, looking both toward the Macarena & the Andes, also a photo of the ranch. This was about 5:00 p.m. Tonight it is clear (7:35 p.m.). I can hear no amphibians but a *Bufo marinus* was found on the ranch porch (soil & continuous with

Tebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Nov. 30 the yard. John, Dr. Medem and several Colombians have gone out night hunting. I am forced to stay in because of an infected foot.

John has obtained from one of the Colombians a weather sequence for an average year. See his notes for this information.

Dr. Medem and a helper returned about 9:30 p.m., empty handed. John & his aide returned about 11:30 p.m. They had gone 3 miles + to the river to the S. He had little better success. He got a ~~young~~ Bufo marinus which he discarded following a temperature record. He heard, what he believed to be a frog out over the river, in trailing branches of trees. (See his notes).

Dec. 1 Prepared the skin of a large jay-like bird shot yesterday by Carlos. My infected foot is restricting my activity. Overcast much of morning, clearing about mid day. Scattered clouds but warm & sunny during afternoon. Walked to spring area and nearly jungle to get photographs. Took pictures of jungle growth along stream below spring; banana growth in jungle (looking toward sky); forest floor; termite nest in jungle; nests in tree near ranch; the Macarena looking

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Dec. 1 NNW; cows near the ranch; Henrique, a little Colombian boy (who has the "nuche"). By now my foot was disturbing enough to give first aid treatment — soaking in hot soapy water, scraping of necrotic tissue, salving with sulpha, and bandaging. Dr. Medem's treatment of the "nuche" has been successful. All seem to have died and ~~are~~ the boil like swellings have gone down. Henrique is happy. Medem's treatment was to wash the sore with alcohol, put on sulpha & aureomycin salve and then a bandage. The larvae died? Medem says this is caused by reduced opportunities for respiration & the drugs. He claims the larvae cannot be successfully squeezed out.

The ranch house that we have been staying in is a direct product of the surrounding environment. The frame is of bamboo covered with reddish brown adobe mixed with dried grass. The mud is plastered on a lattice of horizontal pieces of bamboo, tied an 1" or so apart. The roof is a thatch of palm leaves

held in place as sketched (view of attachment of leaf from inside house looking upward at ceiling. These roofs are entirely water

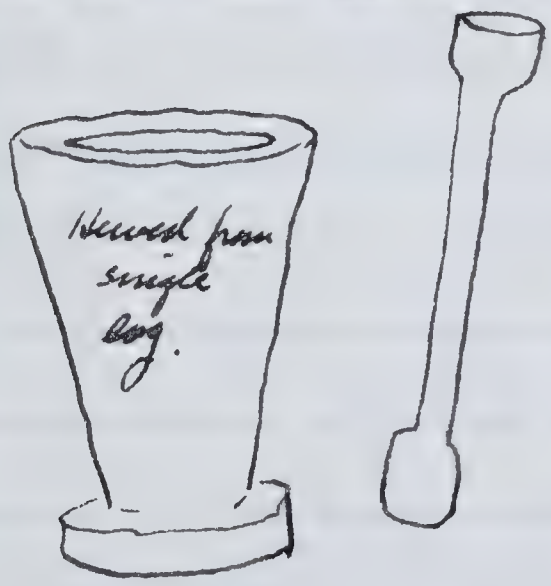
Stubblins, R.

1950

Journal

Macarena Cordillera, Meta, Colombia

Dec. 1 proof but burn readily. The transverse pieces of bamboo, to which the leaves are attached are lashed in place with vines ¼ to 3/8" in diameter. In addition to vines, strips of twisted rawhide are used to bind things. Such strips are cut from a single piece of hide, cutting in a spiral. ~~of~~ The floor is of hard packed reddish soil, swept frequently by the scrupulously clean senoras, their broom a piece of bamboo with plant fronds the sweeping portion. Grain is ground in a large wooden bowl by pounding it with wooden sticks (see sketch). These people keep many cattle, chicken, pigs, horses. Many of the animals such as the chickens & pigs have free access to the yard adjoining the house and are continually being driven from the house.



Carlos and John went out about 6:30 p.m., just after dark, to the caño E of the ranch. They got ~~2~~ 4 Jacaretinga, 2 little fellows about 4" snout-vent and 2 larger ones

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Dec. 1 about 10" snow-rain. They returned early, about 8:30 p.m.

Dec. 2 Today we are to leave for Villavicencio. John & I rode horse back to the stream side camp near the air strip. Dr. Medem and a Colombian accompanied us on foot. I was happy to have a horse because of my foot infection. Isadoro, a Colombian of excellent physique & energy led two pack animals with most of our luggage. The aerotaxi was expected at about 9:00 a.m. but we learned its arrival time could not be depended upon. The plane was not there.

I wanted to get some photographs of the Güejar River, about 3/4 mi. S of the camp. Isadoro accompanying, we rode to the river. After making my pictures, we searched for animals. We found numerous black tadpoles in shallow pools among the rocks that bordered the river. Some of these pools were connected with the river. Others were isolated but were obviously remnants of high-water flow of the Güejar. There was much drift wood lying about. Many recently metamorphosed toads were caught about the pools. There seemed to be two kinds although there

Stebbins, R.
1950

Journal

Macarena Cordillera, Meta, Colombia

Dec. 2 was largely only one kind of tadpole evident. I saw one large olive tadpole about $1\frac{1}{4}$-$1\frac{1}{2}$" head-body length in one of the pools.

Tadpoles were carried in a wet handkerchief and the small toads in my exposure meter case. I had not expected to do collecting.

We saw several Eleutherodactylus lemniscatus among the ~~Trees~~ river border vegetation and log jams. A few Ameiva were also seen.

Isabora called to the boys across the river, who were clearing a trail through the jungle. They came across in their dug out canoe. I photographed them when they were approaching our side. I also took a picture of Isadoro swimming in the river. He is a strong swimmer breasting the rather fast water with skill. In some parts the river swirls over a slanting irregular bed churning itself into foam. In general it is about 50 yds. wide.

On the ride back to the camp near the air stripe, Isadoro showed me some of the interesting plants of the area. His specialty is botany although he knows a good deal about the local animals. He pointed out a broad-leafed tree-like parasite growing

Stebbins, R.

1950

Journal

Macarena Cordillera to Villavicencio, Meta, Colombia

Dec. 2 at the base of a larger tree. The parasite had milky sap. We said it would kill its host. He also called my attention to a red-fruited bush; the fruits are used to relieve headaches. They are aromatic. I heard the cicada-like call that we had noticed coming from the trees when we visited the foothill escarpment a few days ago. Isadoro said it was made by an orthopteran. I had thought the sounds produced by an amphibian.

When we returned to the camp we found a number of butterflies of several species hovering about a damp spot. John got several using his cap as a net. I took several photos of the camp & surroundings.

The airotaxi arrived about 11:30 a.m. The administrator for the Institute was on board. We returned to Villavicencio with him and an elderly Colombian who was ill - stiff neck & fever. The flight required about 30 - 35 min. By horseback, it is 2 - 3 days.

Spent afternoon photographing Hyla crepitans & Rana palmipes habitat near the Institute and getting our animals stored there. Caught a yellowish

Stebbins, R.
1950

Journal

Villavicencio to Bogotá, Colombia

Dec. 2 snake, about 4 ft. in length at the side of the road into the Institute.

Dec. 3 This morning about 9:30 a.m., Carlos brought titi, my pet monkey. We loaded our luggage into a taxi & accompanied by Carlos, drove to the air field. John and I tried to catch a male Gnamilophonus of good color to be used in preparing a color plate on return to MVZ. We succeeded only in catching 2 females. The males seen, however, were not brightly colored. Several Anura were seen but none could be moved. Our plane left for Bogotá about 11:00 a.m. We flew for about 6-8 min. out over the llanos to gain altitude to cross the eastern Andes. The mountains were largely concealed in clouds until we neared the Bogotá plain where the cloud cover was broken. The flight required about 40 min.

Dec. 4 Spent the day preparing to leave the country. Most of afternoon was taken up with getting clearance to leave Colombia.

Dec. 5 Left hotel Claridge about 6:45 a.m to get live amphibians to take home with us. Got Phyllobates, some with tads on their backs, Oedipus, and Eleutherodactylus bogotensis. Upon return to hotel prepared

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Dec. 5 formalin specimens for shipment to the States in large aluminum milk cans with rubber gaskets cut from inner tubing. Specimens were wrapped in gauze-like cloth and wet down with 1-9 formalin (amphibians & reptiles alike).

In the ~~afternoon~~ forenoon, I took color and black & white photographs of the *Hyla labialis* habitat near the Servicio. Desultory croaking was heard and 2 ♂♂ 1 ♀ collected for return to the U.S. alive.

At the Institute said goodbye to Dr. Richter and Dr. Osorno. Dr. Borrero was away. Tentative identification of our amphibian material was made by checking against the Institute collection. We have the following: *Bufo typhonius* - a black spotted, high crested toad; *Leptodactylus peterzi*; possibly *L. marmoratus*; *L. rainiformis*; *Lithodytes lineata*, a small frog with dorsolateral cream stripes and red markings on hind limbs; *Eleutherodactylus bogotensis*, a hyla-like frog, brown in color, found about Bogotá; *Hyloxalus* sp.? obtained at Buenavista, a frog with a stuttering whistle, all on one pitch; *Phyllomedusa hypochondrialis*,

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Dec. 5 a frog, green dorsally and with orange areas on hind limbs crossed by lavender stripes:

Perico came this evening with Papacito, John's parrot and later Torres Borrero arrive to say goodbye.

Last night we visited Hector Acebes whom we had met at the Roberto Franco Institute. He is a friend of Dr. Zulueta. Acebes is Spanish. His wife, Madeline, is from a Bostonian family. They have 2 children, girls. Mr. Acebes has travelled widely in Africa, North & South America. He spent 3 years in the American Army during World War II, in the European theater. He speaks good English & Spanish, as does his wife.

Acebes is an excellent photographer. He showed us numerous pictures of human types photographed in Africa, the middle east, & So. America. Many of his pictures have been published. He does little writing himself and the photos have been used in articles of others who have interviewed Acebes. Acebes is a man of considerable financial means.

Stelbrink, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Dec. 5 He showed us shrunken heads of adults and children, collected by the Jiburotes (sp.?) Indians of the upper Amazon in Ecuador. The tribe name is pronounced "Hēburo". In preparing the heads, they are skinned from an incision at the back of the head and neck. The lips of this incision then are sewed closed. The skin is immersed in water and is then ~~rinsed~~ and filled (through the neck opening) with hot sand. This shrinks the skin rapidly. The sand is poured out & hot stones are put in. While the stones are in place, the surfaces of the face & neck are ~~is~~ rubbed with a hot stone which blackens & hardens ~~it~~ them. The eyelids are also sewed closed but the stitch is removed after the head is shrunken. The hair, of course, does not shrink. This along with less shrinkage of the nose & ears (due to presence of cartilage) results in some distortion of original proportions.

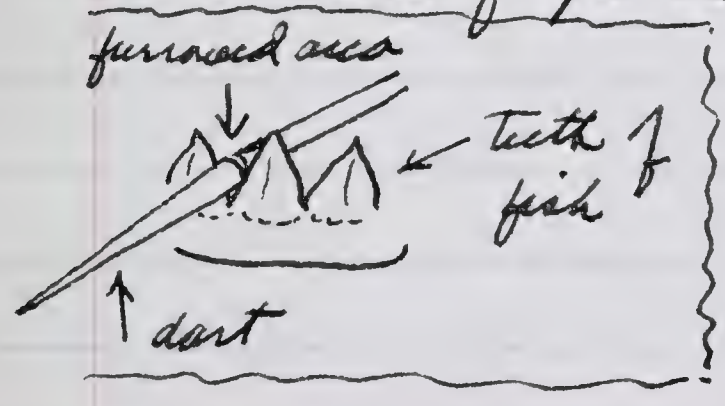
Archer also had a collection of blow gun darts & blow gun. The darts are slender sticks about 10-12" long, 1/8 to 3/16" wide ▭ = appearance of X-section. When a dart

Stebbins, R.
1950

Journal

Bogotá, Cundinamarca, Colombia

Dec. 5 is prepared for killing an animal, the tip is twisted between the sharp edged teeth of the skull of a certain species of fish. This furrows the wood, about an 1" or so back from the tip. The tip of the dart is then coated with curare, a gummy poisonous plant product. When the dart is fired into an animal, the tip breaks off at the scored area and the curare does its deadly work. The darts are used to kill birds & monkeys. In the Choco, the skin secretion of dendrobatid frogs is used as poison.



The blow gun is made of hard wood. It is prepared in 2 pieces. A straight piece of wood, about 8 ft. long is split down the middle and the split surface is rubbed against another, similar piece with damp fine sand as an abrasive. The 2 pieces are so prepared to fit exactly together. A smaller round piece of wood is then said between these two and the ~~the~~ outer pieces worked back & forth. Sand is again used as an abrasive. A trough is then cut in each piece & when finished & the 2 pieces are put together, a tube is

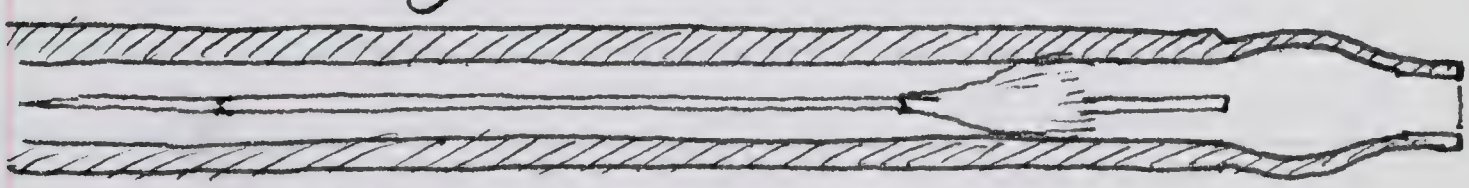
Steblaire, R.

1950

Journal

Bogotá, Cundinamarca, Colombia

Dec. 5 formed. It is said some natives require 3 months to make a good blow gun. The two hollowed pieces are then wrapped together with strips of plant fiber. The outer surface of the gun is waterproofed with a black gum. Ecabe's gun looked as smooth bored as a gun barrel. To fire the dart, a small tuft of plant down (like milk weed down) is wrapped around the rear end of the dart and the dart with its cottony valve is slipped into the barrel. Ecabe's gun had a bone mouth piece. To fire, the mouth is placed to the mouth piece & an explosive puff of air is forced into the tube. If the dart is properly wrapped with the down, it emerges at high velocity and is capable of 1-1½" penetration into a monkey or bird.



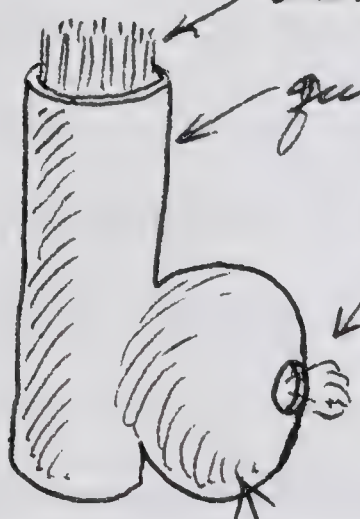
The dart in place.

The darts may be carried in a quiver-like container, thrust in among what looks like a dried grass-like plant material.

Stebbins, R.
1950

Journal

Dec. 5 The down is carried in a spherical container attached to the quiver. It is removed through a hole.



Dec. 6 Today we started our journey home.

I checked my Schultheis 0-50° C thermometer, used on all temp. records of animals & their surrounds taken on this trip, against 7 0-110° C larger thermometers. The latter averaged 22.2-22.3° C (in water bath); the former was 21.9° C. (.3 to .4° C error in my thermometer at this temp.).

Species Accounts

Birds

Mammals

Amphibians

Reptiles

Birds

Stebbins, R.
1950

Plover-like bird

El Mico, 41 km. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 26 ♂ RCS 5141 shot in weedy pasture 200 ft. SW of ranch house. This is the bird that is so fretfull at night. Their shrill kee kee kee kee kee kee kee kee is often heard overhead fading or increasing in volume as the birds circle about. This species evidently was at our Cubetana camp in the Magdalena Valley, judging by the voice.

The animal looks plover-like to me and its nocturnal flying & calling recall to my ~~my~~ mind the killdeer. The eyes are exceedingly large, each occupying a third or more of the volume of the skull. They are pale yellow in color. The legs are yellow. The animal was a male with testis 6 mm. X 11 mm.

Judging from their continual calling and flying at night, the birds must be rather wholly nocturnal in habit or else they are readily frightened.

The bird was shot at about 9:30 p.m. It was difficult to kill by squeezing its chest.

Stebbins, R.
1950

Colinus cristatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 Finally got a quail. Have not seen many, only 6 or 8 since arriving at Cerbatana. Have heard calling individuals several times. _ _ ' _ _ ' "bob-bob-white."

The voice suggest that of the N Amer. bob-white, which the bird resembles physically. The call is less clear, has more of a whisper quality mixed with a whistle, than the bob-white, as I recall it. I don't believe I have heard the 3 parted call given by bob-white, but I do not know the species well. Calling individuals have appeared to be sentries on watch for danger while other individuals are in brush where visibility is poor.

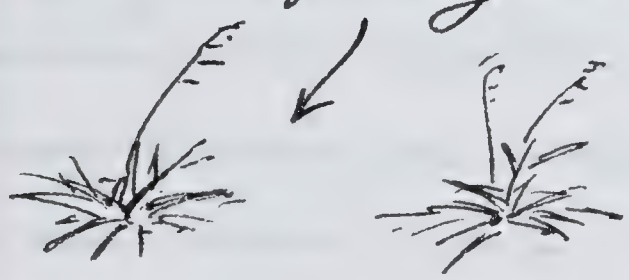
I have had only fleeting glimpses of the birds as they scurry for dense cover. Today I came upon 4 birds under an isolated cat's claw-like clump in the middle of the Cerbatana quebrada ¼ mi. SW of camp. It was 12:00 noon, ~~and~~ warm and clear. The birds were resting in the shade of the brush 10 ft. from the stream. I shot through the bush, killing a large male.

Stebbins, R.
1950

Colinus cristatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 26 Looked for quail W of railroad track & N of quebrada. Heard none but flushed one bird from thicket near river. The hills are covered with short, low-growing, bunch grass - green and most with fruiting stalks. In some areas there is a light green herb with leaves as -



Adenia bicapsularis?

This plant has been seen in low, moist areas where the quebrada joints the river. It seems to grow to about 5-6" high. Quail have been seen in this area.

Oct. 28 While searching for an Iguana at the bottom of a brushy gully, I started up 3 or 4 quail one of which I shot. The bird behaved like a decapitated chicken; it flopped about violently. It had been shot through the head and neck. See account of Iguana iguana for details of habitat. The birds were not calling.

Stebbins, R.
1950

Colinus cristatus

Cubatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 1 ♂ RCS 4947 calling from 3 ft. up in bush 15 ft. high (cat's claw-like). Shot about 200 ft. W of camp at 6:35 a.m. Only bird seen and heard. Possibly mate of JRH 1481, shot yesterday about 75 ft. N of camp.

On well vegetated mesa ¼ mi. S of camp saw a pair in area where opalia-like plant (six-leafed, pale green - to 5-6" high) abundant. Standing pools of water from recent rain. Organpipe-like cactus present.

Heard quail on mesa and flat to S. Have heard more today than at any other time.

About 10:30 a.m. came upon a pair, 5 ft. above ground on lower branch of tree. Shot female. Male remained for about 40 seconds looking down and nervously about at female flounded beneath him. Before I could fire again he took wing. Both birds appeared to be in breeding condition (as based on gonads). This bird, RCS 4950, was taken in the Lajas Valley about 150 yds. N of the quebrada Lajas and about 200 yds E of the railroad track.

At 12:30 p.m. I saw a pair at the side of the railroad track just S of the railroad bridge near camp.

From the foregoing it is evident the birds are pairing.

Stebbins, R.
1950

Columbigallina passerina

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20-25 These doves are very common, especially along water in the Cerbatana quebrada. They are commonly seen in pairs but our collecting has brought us in mostly females thus far. The males have a pinkish cast to the plumage; ~~and~~ this color may have suggested to us the chocolate of another species that we have avoided. The female collected on the 20th was following a male. Both were feeding on a rocky hummock 75 ft. S of the quebrada S of camp. These birds may walk with the tail erect.

Oct. 26 RCS 4921 ad. ♂, double layered skull. Many feathers at base of right wing just opening from sheaths. Most fell out with skinning. Some seemed to be upper wing coverts but others may have been secondaries. Iris orange brown or rust and feet cream.

Oct. 29 Saw male following female, turning from side to side, vibrating wing tips, and bowing, evidently a courting display. Female was indifferent.

Oct. 30 Paulino had found a nest near camp, about 40 ft. to S. John Hendrickson approached while I stood watch to check identity when bird left nest. Hendrickson decided it was a male of

Stubbs, R.
1950

Columbigallina passerina

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30 Columbigallina. The bird dove into thick brush rather than in my direction. The nest is lightly & loosely put together; it seems to be mainly of small twigs. There are 2 eggs.

Nov. 1 Heard what appeared to be this species. The bird was small & gray backed but I am a little short of being certain of its identity.

coo whoo

Soft, mellow whistle; first note about 4 notes above my lowest whistle; second note about 3 notes above first.

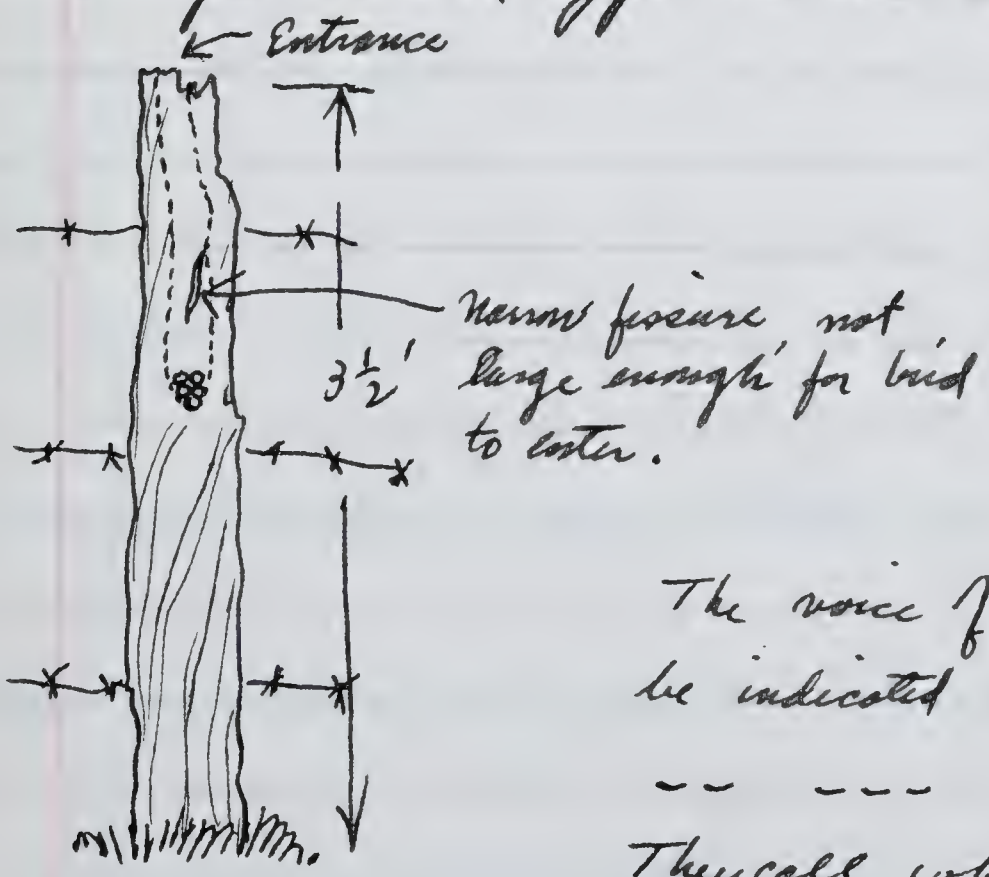
Stebbins, R.
1950

Forpus conspicillatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19-22 I have seen this species every day since our arrival. They are seen singly and in groups of 5 or 6, the latter I believe more common. They frequent the terminal branches of the larger trees where they are difficult to see although they are noisy. Their chatter suggests somewhat the song of the house finch. The males possess blue in the plumage; the females not. I have seen more males than females.

Oct. 23 This morning I saw a female emerge from a hole at the top of a fence post near the railroad track. I could faintly make out 6 light-colored eggs in the bottom of the hole.



The voice of this species may be indicated graphically so -

-- --- -- -- ---.

They call while in flight.

Stebbins, R.
1950

Forpus conspicillatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 On N bank of quebrada, ¼ mi. W of camp, saw flock of 7-8 Forpus. Scattered individuals & pairs seen on down to the river.

A female was brought into camp today by a small boy who said he caught the bird by clapping his hand over the hole it entered. We have the bird on lease. Today she laid a white egg → Size & shape of egg.

Oct. 25 A male came into camp today and fed our captive female by regurgitation. He worked his head and neck from side to side and then leaned forward and downward to feed the female which perched 5" below him. She called between feedings.

Oct. 26 A boy brought in another female parakeet today. She was found in a fence post, with 3 eggs. Our captive of the 24th is dead. The one gotten today was obtained near the quebrada Lajas.

Oct. 30 Examined nest in fence post found Oct. 23. Eggs still present but no adult. Time 12:30 p.m.

Nov. 2 No adult at above nest. I believe nest has been abandoned.

Stebbins, R.
1950

Crotophaga ani

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 27 Came upon this species for first time. Found a flock of 10 birds just W of railroad track and immediately N of the quebrada. Shot 5 birds as rapidly as I could and then took them to camp. Returned 10 min. later and got 2 more. All were males. Perhaps at this season males and females form separate roving flocks. John Hendrickson & I have been at this collecting site nearly everyday since arriving at Cerbatana.

I believe I shall no further difficulty in distinguishing between sulcirostris and this species. The highly arched bill, larger size, more phlegmatic behavior and distinctive voice should serve to distinguish it.

Although I picked off one bird after another, the remaining individuals stayed in the same general area. Even after a break of 15 min. or so, the birds still were present. Finally, the 3 remaining birds of the original 10 took off across country to SW. I followed but they were exceedingly wary. Whereas before I could approach within 30-40 ft., now the survivors fly when I came into view at 50-75 yds.

A number of the birds appeared to be molting

Steblins, R.
1950

Crotophaga ani

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 28 Returned this morning, about 6:45 a.m. to place immediately W of railroad track, along quebrada, where yesterday I got 7 anis. Three C. ani were present. I shot one of these and Hendrickson returned later and got another. The bird I got seemed to be a female although I am unsure. I opened her carefully but was unsure of the material removed as supposedly gonadal. Whether male or female, the ~~[illegible]~~ gonads are in a resting state; the skull was double layered.

One C. ani was associated briefly with a flock of about 10-12 sulcirostris. I wonder if the 3 birds seen this morning are the same 3 remaining from the group of 10 worked on yesterday. Hendrickson's specimen was also a female.

Nov. 1 Came upon a group of about 6 or 8 ani 1/4 mi. S on railroad track, from camp. Birds flew across track, giving their whistle note with rising inflection. I shot one bird, a female. J. Hendrickson prepared skin. Was this lot composed of females as the previous group was of males?

Stebbins, R.

1950

Crotophaga ani

Villavicencio, 500 m., Meta, Colombia

Nov. 19 Female with resting or immature ovary. (2) ← actual size. Dark gray upper wing coverts being replaced by purplish black, glossy coverts, anteriorly. Here & there body feathers opening from sheaths. Sooty, non-glossy body feathers widely present.

Ad. ♀, ovary with 5-6 eggs 2 mm. in diam., rest small. Wing and tail feathers with sheathed bases and not fully grown out – several in tail, 2 in one wing, one in other. Body feathers generally glossy purplish black. 13 other birds seen in this lot.

Ad. ♀, ovary as above, but largest eggs perhaps $1\frac{3}{4}$ mm. Molt replacements (feathers with sheathed bases & not fully grown out in flight (wing & tail) feathers & few body feathers, dorsally & ventrally.

Ad. ♂, testes yellow range, 4.5 x 2.2 mm. No molt in tail feathers but sheathed replacements in wings, rump & ventral body feathers.

Once 5 birds perched on a post 5" in diam.

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 John shot and got notes on 3 adult C. ani.

Stebbins, R.
1950

Crotophaga sulcirostris

Villavieja, 1400 ft., Huila, Colombia

Oct. 18 Cloacal temp. of adult individual 42.3 °C.
Immature 4855 (judging by bill) shot 75 yds. E railroad track.

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 I have shot 8-10 of these birds in an effort to locate C. ani. This species seems to be the common one down near the river on the S side of the quebrada in the area where Dr. O. Pearson has indicated C. ani & C. major. I shot 3 sulcirostris from flocks of ani here. The birds are sometimes found in pairs and sometimes in flocks of 4-10 birds.

I examined the gonads of 3 birds shot and preserved the testes of one (RCS 4914). The other two possessed gonads as follows: (1) = testis size; regrowing tail feathers - 3 emerging from sheaths on left side of tail - no other evidence of molt - perhaps loss by accident. (2) = Ovary - natural size; no sign of molt.

On the basis of these samples and the occasional pairs of birds seen, it would seem that this species may be approaching breeding.

Oct. 26 Came upon a loose flock of 8 birds W of camp, just beyond railroad track and N of the quebrada. Shot 3. The first bird shot was a male. A female remained nearby, calling. She was also taken. A few minutes later a second male was obtained from same flock.

Stubbins, R.
1950

Crotophaga sulcirostris

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 26 This male was in body and flight feather molt. I have begun collecting this species because of absence of *C. ani*.

Stebbins, R.

1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30 Ad. ♀ 4976, resting ovary, regrowing several wing and basal tail feathers, gotten on S side quebrada, 100 ft. from where it joins river. Time about 11:00 a.m. Scattered clouds. Skull double layered. Iris dark.

Stebbins, R.
1950

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 RCS 5150, ad. ♂, testes 5 X 2.5 mm., iris pale yellow. This bird was shot by a Colombian lad from the ranch. He got the bird at the spring area to the west. Mouth lining orange.

Tongue (nat. size)

Stebbins, R.
1950

Synallaxis albescens

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 22

♂ RCS 4890 This individual was found on the N side of the quebrada, ¼ mi. W of camp. Here the ground cover is quite dense, making it difficult for me to move about. The bird responded to "squeaking". It flew into the lower branches of a rather open-foliaged tree. The stream was about 30 ft. away. Time about 9:00 a.m.

Oct. 28 ♂ RCS 4930 - Skull as RCS 4890; testes enlarged - 6 x 4.5 mm. I have tried repeatedly to find this species since the 22nd. Today I got it as it worked in the lower branches of a cat's claw-like bush in a laterally gully, 300 yds up the quebrada S of camp. The bird flew to the ground under this rather dense bush and I shot it there. There were scattered clumps of bushes 8-10 ft. high, 15-20 ft. canopy along the gully. The surrounding terrain was barren, rocky, and with short, green "bunch" grass. I shot the bird about 10:30 a.m.

Stebbins, R.
1950

Synallaxis albescens

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 29

♂ RCS 4938

♂ RCS 4939

[= two layered areas of skull]

Got RCS 4938, testes enlarged, about 10:45 a.m. Bird in heavy growth of tributary gully to main Cerbatana quebrada. This gully is on N side of quebrada and joins it about 200 yds. W of railroad track. Bird gotten 300 yds from quebrada in more arid section than that at ~~of~~ mouth of gulley.

RCS 4939, testes also large, gotten on S side of quebrada, about 200 yds SW of camp. I was walking N along railroad track when I saw long tailed bird rather laboriously fly across quebrada, a flight of 100 ft. in open. Bird alighted in dense tangle on S side quebrada, in area examined on many previous days but without results. Both this individual and 4938 possessed immature condition of skull (see sketches)

This species possess a light tan or nearly beige iris.

I have not yet identified the song.

Stebbins, R.
1950

Synallaxis albescens

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30

♂ RCS 4941

Found 4941, ad. ♂, testes 4.5 X 6.5 mm. singing from near top of mesquite-like tree on N side of quebrada 50 yds. W railroad bridge. Bird dropped into stream when it fell.

I first noted the light colored venter and the dark throat patch showing each time the bird's throat swelled with song. The song is two-parted and may be syllabified "chee chi". It may be symbolized

— ⌣ — ⌣ — ⌣ — ⌣

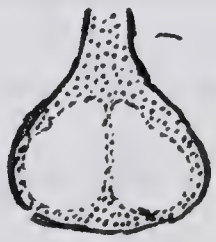
1 sec. 1½ sec.

The two notes are given during a period of about 1 second; the interval between calls is about 1½ sec. The second note is slightly higher than the first. The song is raspy (not a clear whistle).

Nov. 1

①

♂ RCS 4948



②

♂ JRH 1487

Obtained 2 spine tails, one prepared by J. Hendrickson (JRH 1487). These were both gotten by seeking out calling birds and then

Stebbins, R.

1950

Synallaxis albescens

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 1 attracting them by "squeaking". A third was called up but not collected.

Both birds collected were males with enlarged gonads. Two of the birds were called up on the mesa ¼ mi. S of camp. One was collected (8:25 a.m.). They were in moderately dense growth with intervening patches of grass & oxalis-like ground cover. There were shallow pools from recent rain. The third was heard at 60 yds. and was shot 300 yds. N of quebrada Tejar & 50 yds. E of railroad track. This bird was obtained at 10:00 a.m. – Male, testis, 4 x 3.5 mm.

Reevaluation of voice —

which which which

chee chee chee

— — — —

— — — —

I believe my earlier analysis just reversed the relationship of the high and low notes.

Nov. 3

RCS 4994
(Collected by John Hendrickson)

Skin prepared by R. Stebbins.

Stebbins, R.
1950

Flycatcher

El Mico, 41 kms. S, 22 kms. W San Martín, 1600 ft., Meta, Colombia

Nov. 30 Ad ♂ 5147, testis 7 X 3.5 mm., skull double-layered thumph. Shot in same tree with RCS 5148.

Stolzmann, R.

1950

Villavieja, 1400 ft., Huila, Colombia

Oct. 18 Saw possibly 8 or 10 pairs of these birds. The more conspicuous males were usually seen first but often a female was discovered nearby. The birds are evidently nesting. I saw an adult male carrying a larva of some sort. The above number was seen in a greater mile walk lasting about 2 hrs. (in the morning) and another walk over generally the same area in the late afternoon, also lasting about 2 hrs.

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 This species is seen off and on in the vicinity of camp. The Colombians call this bird "Santa Maria".

Stebbins, R.
1950

Tyrannus melancholicus

Villavieja, 1400 ft., Huila, Colombia

Oct. 18 RCS 4857, ad. ♂, skull double layered; 43.5 gms. No molt evident. Shot from upper branches of tree 40 ft. high just E of railroad track E of Villavieja; time about 4:30 p.m. Clear - few scattered clouds. Rained during forenoon. Cloacal temp. 42.6°C.

Cerbatana, 5 km. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20 RCS 4862, ad. ♀, skull double layered; 47 gms. No molt evident. Shot from top of cat's claw-like growth near river SE of camp; site at E end of banana patch. Ad. ♂ 4863; skull double layered; 39 gms. No molt evident. Bird appeared as I chased ♀ which had broken wing. Male called excitedly from same bushes as female. In open foliaged tree 25 ft. high near "cat's claw" clump found loosely constructed nest at height of 15 ft. Perhaps only foundation of nest. On opposite side of tree, 10-12 ft. away was large rounded nest with opening at side. This structure was entered by kingbird with white stripe over eye, dark eye stripe, and rusty back. Another individual perched 5 ft. away. I believe the partly built nest belonged to melancholicus.

On dissection female found with much enlarged oviduct and oviducal egg, intestinal

Stiebler, R.
1950

Tyrannus melancholicus

Cerbatana, 5 km. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20 Shell, 10 x 5 mm.; ~~not~~ ovary saved; Female possessed extensive area of bare skin ventrally but it was not notably edematous. Skin of venter seemed slightly thicker however than that of sides and there was an extensive, elongate oval area of fat 1½-2 mm. thick beneath the bare area. Male had considerably less fat in this area. Female also possessed more fat beneath skin of lower back than male.

Birds collected about 9:00 a.m. Clear, warm morning.

Oct. 22 Shot a pair along stream W of camp. Behavior similar to pair obtained on 20th. When one bird shot other bird came near, calling. Birds seemed to be prospecting for nesting site. Female had less fat beneath skin of venter than bird obtained on 20th but similar amount beneath skin of lower back. Both birds exhibited double layered skulls. In each bird a secondary flight feather was expanding from its sheath.

Oct. 26 Shot an adult ♀ from one of the lower branches of a large tree (40' high) on S side quebrada Cerbatana, ¼ mi. E of camp. Double layered skull. Large oviducal egg with membranous covering but no calcareous material as yet. Bird had bare

Stebbins, R.

1950

Tyrannus melancholicus

Cerbatana, 5 kms. N Villavicja, 1400 ft., Huila, Colombia

Oct. 26 area 3/4" wide, 2 1/2" long on ventral surface of body but tissues not succulent; skin no thicker here than elsewhere.

Stebbins, R.
1950

Tyrannus melancholicus

El Mico, 41 kms S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 27 Ad. ♀, skull double layered, belly and back feathers with sparse scattering of feathers with sheathed bases; no regrowth in flight feathers. Ovary 7 X 5 mm. No brood patch.

Ad. ♂, skull double layered, no sign of molt anywhere on body. Testis 11 X 5.5 mm.

When one bird shot, the other flew near, calling. Both animals taken at ranch house.

Stebbins, R.
1950

Tyrannus melancholicus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 28 About ¼ mi. E along quebrada S of camp came upon a kingbird harassing a caracara. Later I found the bird perched in a bush near the crest of a small hill (see *Iguana iguana* account). I looked briefly for a nest. Perhaps the bird's mate was on the nest as kingbirds collected to date are beginning breeding or nesting activity. Tried several times to shoot this individual but he elluded me.

Came upon a pair of kingbirds perched on the uppermost barbed wire of a fence. Upon my approach, the birds took to the air but returned to the fence 10-12 ft. further on. The one shot at RCS 4933 had large testes and a double layered skull.

Nearly every pair of *melancholicus* has been found near a pair of rusty backed kingbirds (white stripe ~~of~~ over eye and dark eye stripe). Does this indicate similarity in choice of nesting sites? The rusty backs are beginning nesting activity.

Stebbins, R.
1950

Stelgidopteryx ruficollis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 For several days now swallows, apparently of this species, have been seen flying ~~#~~ S in the evening, at about sunset, and N in the morning. This morning, however, the birds were flying low and to the ~~#~~ S or SW. Many hundreds of individuals are involved. They tend to come by in scattered groups of 6-10 birds.

Today I shot 2 adults about ¼ mi. from the town, along the quebrada W of camp. In this area there are nearly vertical banks 8-12 ft. high. Many individuals were seen flying but only occasionally is a bird seen to alight. They do not necessarily choose exposed bare twigs at the tree tops. Several individuals perched in leafy growth under the canopy of foliage, well under trees.

The birds have shown no signs of breeding behavior so far. The testes of the two birds I shot were minute.

Nov. 3 Swallows have been notable by their absence today and yesterday.

Nov. 4 Got ♀ RCS 4997 about 50 yds. S quebrada Tejar. Bird was perched on telephone wire. Ovary appeared to be in resting stage. Another individual was seen on wire 25 ft. S quebrada but it escaped.

Stebbins, R.
1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 29 Shot an adult male, testes small, bird molting (regrowing tail feathers). Specimen obtained in heavy growth of tributary quebrada to main Cerbatana quebrada. Collection site about 200 yds. N of main quebrada on W side railroad track, about 400 yds from track.

RCS 1940 - Iris orange or red orange.

Stebbins, R.

1950

Jay

Cerbatana, 5kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 22 RCS 4893 - This large jay-like bird was associated with another individual of similar appearance, ½ mile from camp along the Cerbatana quebrada. The birds were near the top of a heavy foliaged tree. They were found about 11:00 a.m. The voice is jay-like but seems weak for a bird of such size. I was unable to identify the reproductive organs with certainty.

Stebbins, R.
1950

El Nico, 41 kms. S, 22 kms. W San Martin, 1600 ft, Meta, Colombia

Nov. 30 RCS 5151 shot by Colombian lad from ranch - named Carlos. Gotten near spring W of ranch. Immature female, skull with single layered area centrally on either side of midline. Ovary 11X6 mm., ova below ~~limits~~ limits of unaided vision. Iris dark.

Stebbins, R.
1950

Hylophilus flavipes

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30 Got 4 individuals today – RCS 4942–44 + skin prepared by J. Hendrickson. "Squeaked" up an ad. ♀, 75 ft. S of quebrada, about 300 yds. E of where it joins river. Few moments later got a male with enlarged testes, in same general area.

Got another adult ♀ 100 yds. W of railroad track, 75 yds. from crest of hill S of farm house S of quebrada & W of track. She was tracked down by voice. As I recall the song, it was a two-parted call given repeatedly in a rather clear whistle.
ᴗ ᴗ ᴗ ᴗ.

A male was obtained just E of track, 75 yds. S of farmhouse.

These birds have a cream-colored iris.

Nov. 1 Became better acquainted with the vireo song today – ᴗ ᴗ ᴗ ᴗ ᴗ ᴗ ᴗ ᴗ . Have been able lately to find them by their song. I find the song of a small gnatcatcher resembles somewhat that of the vireo but now can differentiate them.
(seeur wit seeur wit)

♂ RCS 4949 gotten on N side Quebrada Tajos E of railroad bridge. It came to "squeak".

Stubbuiz, R.
1950

Hylophilus flavipes

Cerbatana, 5kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 2 Got ♀ ad. on N side quebrada Tejar, 150 ft. W of railroad bridge. Was attracted to tree by song. "Squeaking" brought bird to view. This bird and another were apparently foraging near the top of the tree. Tree large, about 60 ft. in height, with few lower branches. Time about 4:00 p.m.

Stebbins, R.
1950

Coryphospingus pileatus

Villavieja, 1400 ft., Huila, Colombia

Oct. 18 RCS ♀ ad. 4856. Gonad preserved 3 hrs. after killing. Assumed to be immature before skull check but skull found to be double layered throughout. Shot in dense low growing bushes, 2½-3 ft. high. Came up out of bushes in response to "squeaking". Specimen collected about 10:30 a.m. in rain. Collection site on gentle W. facing slope 100 yds. E of railroad track E of Villavieja.

Oct. 23 ♂ RCS 4904 shot in bushes 20 ft. W of railroad track ¼ mi. toward Villavieja from Camp Cerbatana. Animal responded to "squeaking".

Oct. 27 ♂ RCS 4927, with much enlarged testes, shot W of railroad track and south of main quebrada. Bird in bushes at edge of heavy growth bordering open grassy area.

Nov. 1 ♀ RCS 4951 not saved as skin but gonad preserved. Brown feathers with sheathed bases on left side ventral track (between shoulders) back feathers gray elsewhere. No other signs of molt. Skull double layered. Obtained on mesa ¼ mi. S of camp, about 8:45 a.m.

Stebbins, R.
1950

Sporophila minuta

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19 ♂ RCS 9858 - Shot from top of tree 50 ft. S of camp. This species is particularly common along the railroad track W and SW of camp. Males seem to be more in evidence than females but this may be due to their conspicuous colors. The birds have been seen in all kinds of situations and are by no means confined to the tall grass along the tracks.

Oct. 30 ♀ RCS 9945 shot to confirm identity and then decided to save skin. She was carrying nesting material. Bird obtained just W of railroad track W of camp.

Nov. 2 Observed a male feeding on still partly green seeds of grass along railroad track. This grass is an intense green at this season. It has blades 1" wide and its fruiting stalks grow to 3-4 ft. The natives have cut extensive tracts of it which I suspect they use as live stock fodder.

Stebbins, R.
1950

Bird

El Mico, 41 kms. S & 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 26 Shot in brushy growth along trail to spring, 2 blocks W of the ranch. Spring 150 ft. to W where there is dense tract of jungle. Time about 11:30 a.m.

Skull double layered; testis 2 x 1.5 mm.

Stebbins, R.

1950

Bird

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 RCS 5146, ♂, testis 2 x 1.5 mm., skull incompletely double layered (see sketch); iris brown; underside of feet pale yellow.

RCS 5146

Bird shot in loose leafed, rather open broad leaf trees, 50 ft. E of small stream, 2 blocks W of ranch house. Others seen in bushes & small trees that margin stripe of jungle along stream.

Stebbins, R.

1950

Bird

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 Ad. ♀, RCS 5148, skull double layered throughout, except for small area 3 mm. across, centrally on either half. ovary 9 X 5 mm. ← size of ova. Iris brown.

Shot in broad-crowned, open tree 40 ft. high, 150 ft. SW of ranch house.

Mammals

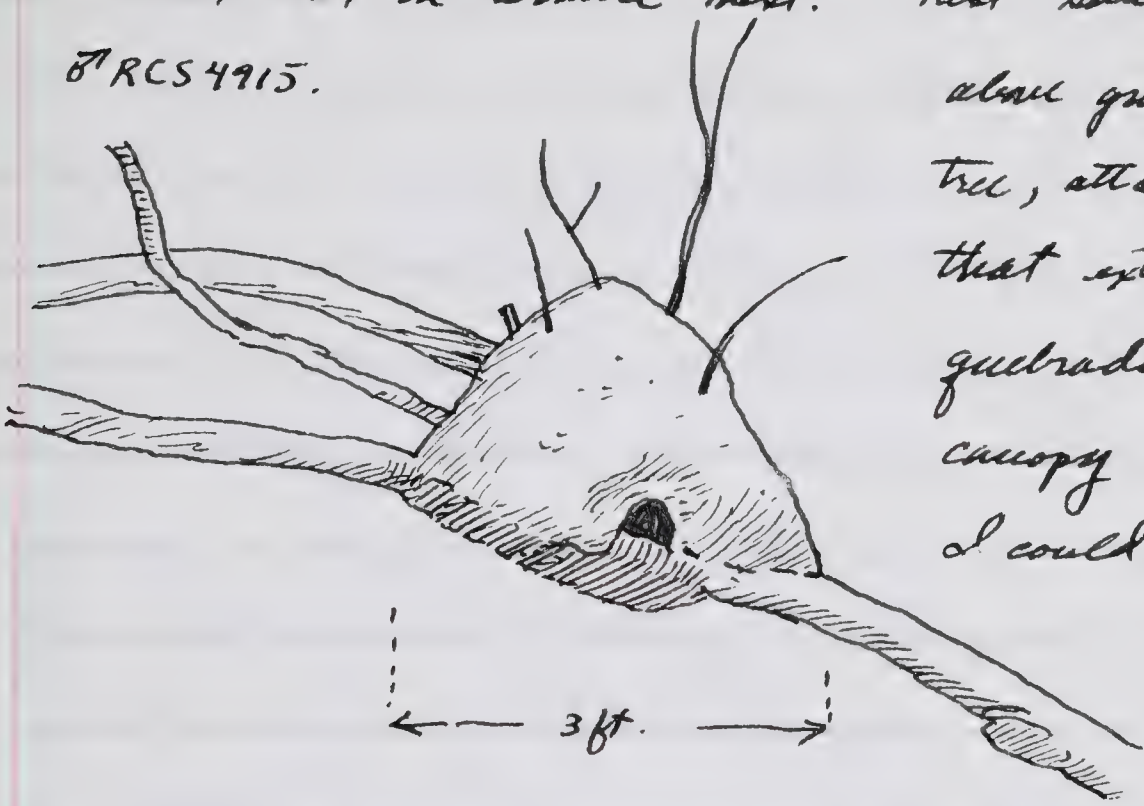
Stebbins, R.

1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 24 Shot bat in termite nest. Nest situated 15-20 ft. above ground in tree, attached to limb that extends out over quebrada. Leafy canopy shades nest. I could see no bat but fired a 22 shot shell into

♂ RCS 4915.



opening (about 3-4" in diam.) near underside of nest. Bat came tumbling out. J. Hendrickson got one in same nest yesterday. His was a different species. Time about 10:00 a.m. Rectal temperature 34.9°C; oesophageal, 36.0°C. Specimen prepared by J. Hendrickson.

Nov. 4 Got 4 bats, all of same species, in drain tunnel under railroad track. This tunnel darkest of any near camp. One end nearly closed by earth slide; other end concealed by heavy foliage. Tunnel floor damp; numerous insects present - mosquitoes? When I looked into tunnel about 8:30 a.m., two bats were hanging from ceiling, one was in flight. At about 4:00 p.m. J. Hendrickson & I closed tunnel opening with mosquito netting. Hendrickson got in tunnel & caught bats. Two hung from ceiling; two from wall, near floor.

Stebbins, R.
1950

Monkey

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 27 About 3:30 p.m., 175 yds. S of the spring where the ranch gets its water, I came upon a group of monkeys. I saw 3 dark colored individuals climbing about in a large, leafless tree that seemed to be fruiting or budding. The monkeys were working in the terminal branches, possibly feeding on the buds or fruit. In denser tree growth frequent sounds of falling objects and the shaking of branches indicated the presence of other monkeys. I saw several of these. They appeared brown. I am uncertain as to whether 2 species were present or a sexual dimorphic form with the sexes separated. Color difference may also have been merely an impression due to differing light.

I approached through a coarse grass field in full view but the animals did not move off. I moved slowly, stopping to watch them for several minutes at a time. I spent about 10-15 minutes observing. I picked one of the brown monkeys and shot it. The animal climbed through the trees, about 30 ft., moving slowly. I was not sure I had hit it. I was about to shoot another animal, 30 ft. up in a tree about 50 ft. to my left, when I noticed the first one hanging by its forelimbs to a vertical branch. The hind legs slowly lost

Monkey

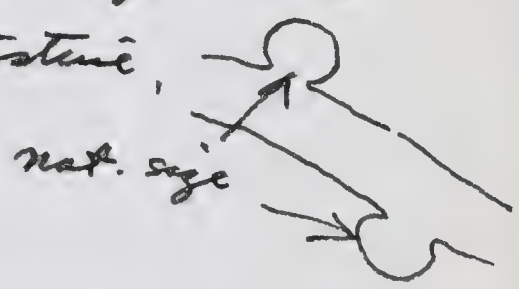
Stabbins, R.
1950

El Mico, 41 kms. S, 22 kms. W, San Martin, 1600 ft. Meta, Colombia

Nov. 27 their grip and with the tail dangled free. Slowly the forelimbs began to slip and at last the animal fell to the ground, crashing through a "banana" tree. It fell about 50 ft. The other monkeys now began moving off into the jungle, but they were not hurried.

The shot animal lay on its side gasping. I pressed on its chest to speed its death. It cried out several times.

The intestine oozed yellow brown seed filled chyme through bullet holes. The material suggested fig. There were about 8 large cyst-like growths from the walls of the small intestine.



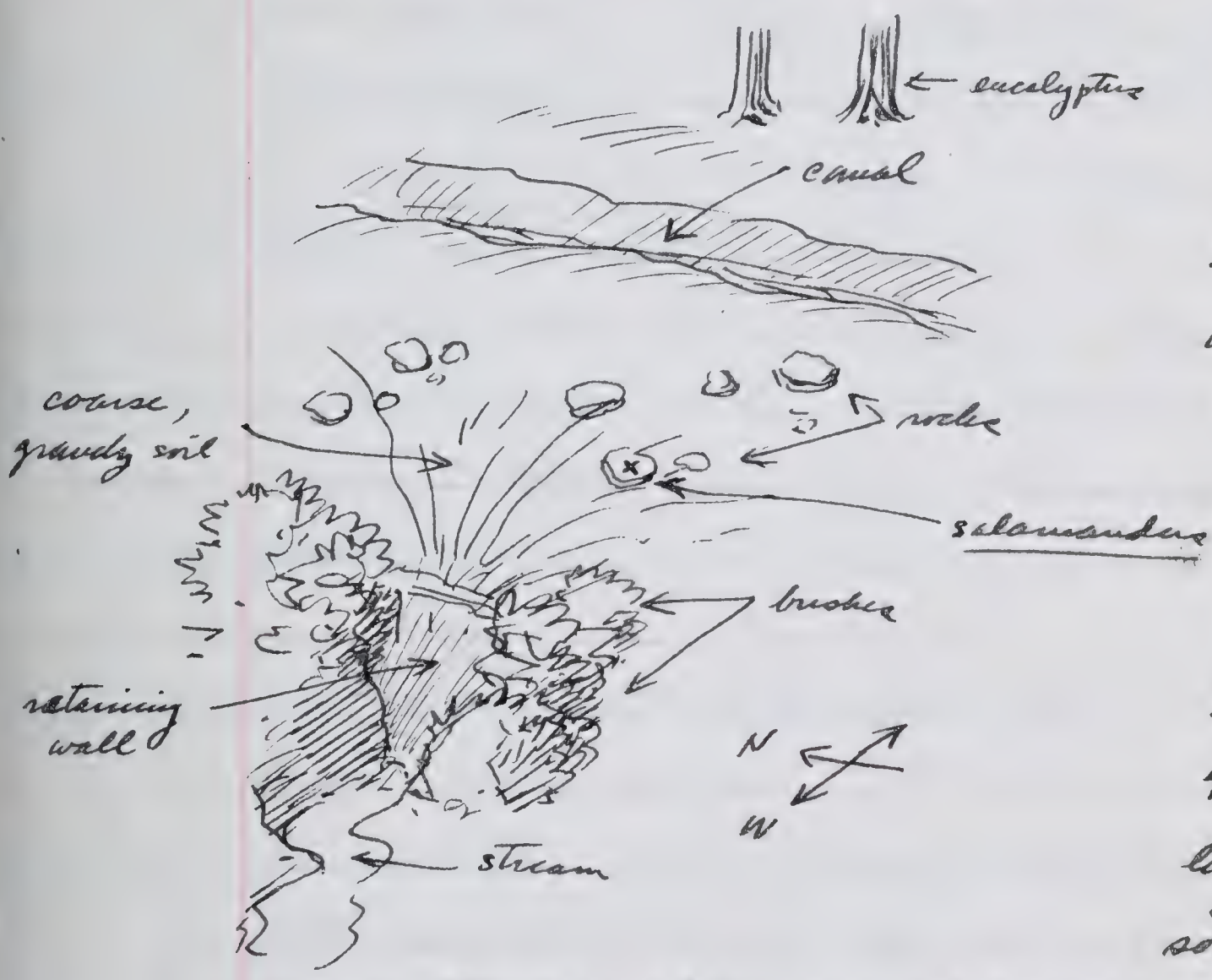
Amphibians

Stebbins, R.
1950

Oedipus

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 We found our first Oedipus at the head of a small stream beneath eucalyptus trees (see journal).



I turned a rock 12" x 6" x 3" and found 5 salamanders under it. These varied in size from about ½ to 3/4" total length to 4-4½" total length. The soil was moist but not saturated, was highly porous and possessed little humus. It resembled decomposed granite. It was whitish to ash gray in color. There appeared to be no burrows. The salamanders were sluggish and disinclined to move when exposed. One individual had body bent as sketched

and retained it so for some time. These are stout-bodied creatures with short limbs. The tail is not used as in Hydromantes but is dragged. As the feet are placed against the ground the toes are elevated and then emplaced.

Stebbins, R.
1950

Oedipus adspersus

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 A milky, sticky, secretion comes from the tail when the animals are preserved. They tend to shed the tail at its base, suggestive of Eurycea. The animals possess a dorsal chocolate or reddish brown streaking on dark brown ground color.

Other individuals were found beneath stones on hard packed soil. Under one stone near the canal 2 were found along with 3 Hyla-like frogs.

Nov. 14 Found small individual, about 1" total length under rock 6"×7"×12" on 25° W-facing slope; no canopy; soil damp and with considerable coarse sand, 15°C at 5:05 p.m. Air 6" above ground, sky overcast, 13°C. Found few feet from Leimadophis this date. See account of Anadia bogotensis for description of habitat.

Medium size individual on 25° W-facing slope, resting on dry twigs 1/8" in diam., beneath rock. Rocks abundant under brake (?) ferns, 4-8" and dark gray in color. Ferns 2 ft. high; they form only canopy. Soil relatively dry where salamander found. See sketch under Anadia bogotensis for location of salamander.

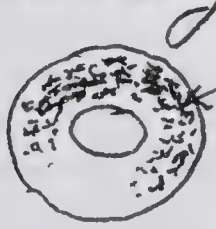
Slebbins, R.
1950

Oedipus ~~chapuisii~~
Phyllobates ~~subpunctatus~~

Bogotá, 8200 ft., Cundinamarca, Colombia

Nov. 14 Ad. ♀ 52 mm. snout-vent.

Above deep blackish brown to black; numerous spots, flecks, bars (oriented longitudinally) on dorsal & lateral surfaces, fewer ventrally; these light flecks have irregular margins and appear to be masses of guanic material which appear pale gold under magnification; the guanic material is variously overlaid with a rust lipoid(?) color so that most markings are rusty brown but here & there the pale gold guanic pigment shows producing an ash gray to pale beige flecking to unaided eye; below light flecks are lighter, appearing beige to almost white (under magnif.); ground color of ventral surfaces light purplish brown; under sides of feet similarly colored;



rust colored markings like dorsum.

ant →
Rt. eye

Another adult ♀ 53 mm. snout-vent similar to above but few & pale ventral flecks; gular area closely flecked ~~in gular area~~ with light marks (small); dorsal & lateral markings whitish (both to unaided eye & under ~~lens~~ lens); no rust colored (lipoid?) pigment over these flecks.

Stebbins, R.
1950

Oedipus

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 14 Juvenile 25 mm. snout-vent – Similar to adult but longitudinal light markings relatively larger & ventral light markings scarce, most abundant in gular area, markings whitish, contrasting more with most dorsal markings, than in adult.

Color notes of foregoing written Nov. 15, 1950.

Stebbins, R.
1950

Bufo [illegible]

Villaviejo, 1400 ft., Huila, Colombia

Oct. 18 RCS 4871-74 were collected along the muddy, gently sloping bank of the quebrada that runs through town. There were pools of quiet, muddy water, only a few inches deep. The stream was not flowing. There had been 2½"± of rain the night preceding. The toads were obtained about 9:00 p.m. A single leptodactylid (?) frog was also obtained. One toad had its vocal sac expanded - it appeared somewhat elongate (oval).

Cerbatana, 5 kms. N Villaviejo, 1400 ft., Huila, Colombia

Oct. 20 Traced down a cicada-like trill and found one of these toads in shallow water of quebrada SW of camp. Did not see animal in act of calling. Down stream about ¼ mi., John Hendrickson and I triangulated another caller but he was wary. When we came within 15-20 ft. he would not call but when we walked away, he soon began again. Another individual called from 30-40 ft. further down stream. Both singers were near the base of a stream cut bank 6-8 ft. high. The shallow stream 2-3" deep and 6-8 ft. wide came in close to the bank here. The toads were found in cavities under the bank, among roots. They probably spend the day there.

Stebbins, R.
1950

Bufo granulosus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila Colombia

Oct. 20 The call is a prolonged, insect-like trill. We collected the animals about 9:00 p.m. The eye shine is pink.

Oct. 27 Two individuals were calling from the small tributary ravine immediately W of camp. They have been stimulated by the recent rain. Today I picked up a recently metamorphosed juvenile of this species as it hopped over the wet sand at the edge of the quebrada S of camp. This individual was about $\frac{1}{4}$" long.

Nov. 1 Picked up individual about 1" snout-vent at side of small wash 150 ft. N of camp. Specimen not saved.

Nov. 6 1" of rain last night after several days of dry weather. Got another individual about 1" in snout-vent in same general area as one taken Nov. 1.

Stebbins, R.
1950

Bufo granulosus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 Seconds duration of call:
2¼, 2½, 3.

Air temp. 6" above ground over mud of banana patch, 25°C at 10:55 p.m.

This species was calling intermittently in banana patch 175-200 ft. S of camp. John Hendrickson and I caught 5 or 6, several by triangulation but all escaped along with other anurans when I tore my collecting sack on barb-wire fence.

The *Bufo* were induced to call by giving a strong, ringing "steamboat" type whistle (mixed vocal & whistle sounds). This could hardly be called an imitation as it only remotely ~~a~~ resembled the toad call. The animals did not always respond. Their call was enough like that of the *Microhyla* obtained this same evening that the first callers were mistaken for this form. Once a passing train stimulated the *Bufo* to call.

The little fellows were found at the bases of tufts of grass and other low growing plants near the edges of shallow pools of standing water between rows of cane & bananas.

They seemed less inclined to call early in the evening when the *Leptodactylus* were going strong but as the leptodactylid chorus waned, the toads seemed to be calling more frequently.

Stebbins, R.
1950

Bufo granulosus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 RCS 5024 - 41 mm. snout-vent - Beige above with markings of dark brown; tubercles tipped with dark brown; circumorbital crests & canthus deep brown or black; tympanum light beige, lighter than dorsum of head; edge of upper lip black & above that whitish; throat with yellow patch (see sketch); venter closely stippled with white or very light gray; tubercles in seat patch area larger, more separated & cream colored; toes with brownish tips; metatarsal tubercles whitish beige.

Rt. eye
ant. →

Iris light beige with brown dark markings.

When I lightly touched parotoid gland, white secretion "popped" from surface.

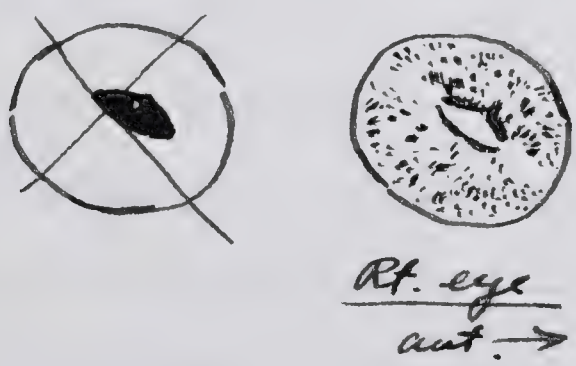
Stebbins, R.
1950

Bufo marinus

Villavieja, 1400 ft., Huila, Colombia

Oct. ± 27 ~~about 25~~ Individual about 4½" s-v brought to our Cerbotana camp. It was gotten in same quebrada in town where *B. granulosus* (?) gotten. Animal obtained by Libardo Tobar.

Nov. 6 ♀ JRH 1503 - 4 3/16" snout-vent. Collected Nov. 5. Most of dorsum marked with heavy blotching of near black to dark brown; here & there lighter areas of deep olivaceous; light areas of dorsum nearly white; upper eyelids & paratoid glands cream with very faint greenish cast; cranial crests brown; paratoid glands finely tuberculate with brown; variegation of upper surface hind legs and sides gray & whitish; foot tubercles rust brown. Tympanum olive gray; uniformly cream ventrally; upper lip marginal with dark rust brown; toes tipped with dark rust brown;



Dark markings show distribution of pale yellow metallic color on inky black background color.

Stebbins, R.
1950

Bufo marinus

Villarica, 1400 ft., Huila, Colombia

Nov. 6 JRH 1504 - $2\frac{1}{8}$" snout-vent. Collected Nov. 5, 1950.
Similar to adult JRH 1503 but 3 pairs of dorsal dark brown blotches instead extensive dark variegations; general vague olive and ash gray variegations form ground; warts light purplish brown tipped with dark rust tubercles; eyelids light olive yellow; light yellowish beige diagonal stripe extends toward groin from paratoid; gray tympanum; upper lip cream; below white; foot tubercles beige, inner metatarsal & palmar - brown; iris similar to adult but upper light margin extends halfway to upper eyelid & generally light flecking more abundant; cranial crests & canthus purplish brown but rather blotchy; dorsal paired dark blotches narrowly edged with greenish yellow (dull); metatarsal ridge (fold) white.

Stubbins, R.

1950

Bufo marinus

Villavieja, 1400 ft., Huila, Colombia

Nov. 8 Body 24°; air ½" above ground 25.4°C; soil 27.8°C 7:20 p.m. Animal about 2½" snout-vent. Found on dirt road in Town of Villavieja.

Stebbins, R.
1950

Bufo marinus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 ♀ RCS 5116 — 5" snout-vent — Above dusky brown ground color; warts darker brown, tipped with brown tubercles; warts along vertebral line & cranial crests rusty brown; ground color of head and parotoids olive to olive brown; parotoids with numerous rust colored tubercles; eyelids colored like parotoids except slightly darker ground & tubercles; pair of sooty warts near antecrani and parotoids; paired sooty blotches between parotoids & sooty marks with vague outline, posteriorly on back; iris black or very deep brown with pale gold pupillary ring & sparse light flecking of pale gold; posterior & anterior eye corners cream; edge of nictitating membrane olive; upper lip yellow; tympanum (dark gray) & side of face olive gray; toe tips from above blackish brown; ventral surface white with gray blotches & numerous brown tubercles; seat patch area cream; under side hind limbs with light lavender brown blotches; under side of feet purplish gray with dark brown tubercles; extreme edge of upper lip brown.

Ad. ♀ with eggs.

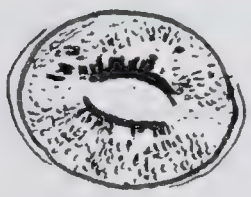
Dark flecks are pale gold.

Stebbins, R.
1950

Bufo marinus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 ♀ RCS 5117 - 5 1/4" snout-vent - Similar to RCS 5116 but ground color lighter, almost beige; warts brown, rust brown along mid line; dark dorsal markings are dark brown; paratoid ground color almost yellow ocher; tympanum dark gray against light olive; underside of throat, belly & fore limbs whitish, unspotted; numerous blackish tubercles ventrally; underside of feet light purplish gray with purplish brown tubercles; iris with rose light color (see sketch). Toad has numerous ticks.



← pupillary margin gold
← flecking of iris pale greenish gold.

Rt. eye
ant. →

Ground color black.

Color notes from living animals, by daylight, Nov. 24, 1950.

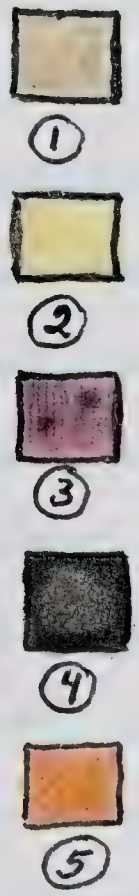
Stebbins, R.
1950

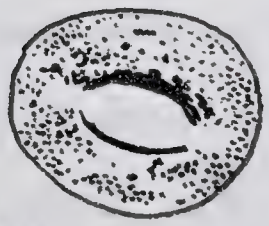
Bufo marinus

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 ♀ RCS 5152, an adult was found on the red clay porch of the ranch house. The porch is continuous with the clay soil of the front yard. It was about 7:15 p.m., after dark. Recent rains probably stimulated the activity of this animal.

♀ RCS 5152, 105 mm. snout-vent — Light ground color throughout light beige (1); this color most extensive & least obscured on dorsal surface of head between eyes, inner sides of paratoids, & sutural "stripe"; dorsal black (4) markings well defined, edged with light yellowish beige (between (1) & (2)); irregular yellowish cream (2) spotting dorsolaterally; ground color suffused with olive brown dorsolaterally; warts pinkish brown (3); sidings of head region — cranial crests, canthi, etc. with dotted lines of small brown warts; tympanum gray; throat pale yellow (2); undersides of forelimbs & chest similarly colored (2); seat patch area yellowish most, lighter yellowish most ventrolaterally; underside hind limbs whitish to cream; ventral surface blotched with light gray; underside of feet dark gray with blackish brown foot tubercles & toe tips; iris black with white gold to nearly silver flecks;





Rt. eye
ant. →

Stebbins, R.
1950

Bufo marinus

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 pupil margined above with white gold grading to narrow margin (next to pupil) of yellow; lower pupillary margin pale yellow but white gold when inverted in relation to sun.

Color notes from living animal in daylight, Dec. 1, 1950.

46 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 30 RCS 5153, 67 mm. snout-vent — Generally colored like preceding adult but darker; ground color dark olive green or grayish olive; light ventral area parotoids, ~~eyl~~ eyelids, and dorsal surface of head yellowish olive green, more grenish than adult; cranial ridges rather uniformly brown; warts similarly colored; iris as adult; ground color dorsal surface brick light olive gray; side of face sooty, especially in tympanic region; upper lips pale yellow; warts & jaw angle & below parotoid white; ventral surface whitish marked strongly with sooty; seat patch area has very faint pinkish orange cast; under side of feet dark gray with yellowish tan tubercles; toes tipped with light brown.

Individual collected by John Hendrickson. See his notes for data on collection.

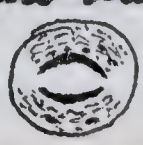
Stebbins, R.
1950

typhonius
Bufo angusticeps

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 Found buffond (RCS 5103) about $2\frac{1}{2}$" snout-vent. Cloacal temp. 25°C; 11:15 a.m. Toad in gully bottom; soil predominately orange with scattered, well embedded light gray rocks; moist sand deposits here & there in depressions or behind stones - 24.3°C in shade; air 6" above gully bottom, in shade 25°C. Collecting site near top of mountain. Broken short grass ~~and~~ mat. Grass grass 2-4" high. Scattered clumps of broad leaf bushes $1\frac{1}{2}$ to 4 ft. high. Many erosion gullies 2-3" to $2\frac{1}{2}$ ft. deep, latter like one where toad found. Several shallow pools along gully. Toad found 5 ft. up gully from one $2\frac{1}{2}' \times 2' \times 1\frac{1}{2}$" deep. Gully bottom and indeed all surrounding soil damp. Water of pool 27°C. Several black water beetles (dytiscids ?) in this pool. Sunny in collecting area. Mountain tops to ~~[illegible]~~ hidden in clouds; high thin clouds to E, out over llanos.

Photograph in color taken Nov. 22, 1950.

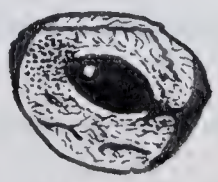
JRH 1579, 27 mm. snout-vent — Brown dorsally with paired brown marks, poorly defined, between limbs and pair of black marks at mid back; blackish brown marks on limbs; vertebral line of whitish; pinkish warts in row dorsolaterally; below gray with salt (white) & pepper (sooty) spots in gular area; larger white guanistic blotches on chest & belly; few dark brown specks here; underside of foot flesh pink;  ← pale gold markings shown in black. Rt. eye ant. →

Stebbins, R.
1950

typhonius
Bufo nigrofumosus

46 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 25 JRH 1610; 65 mm. snout-vent – Above olive brown; vertebral stripe of dull dirty cream to white; rust suffusion on either side of stripe; rather extensive area of larger warts, dorsolateral in position, rust colored; dorsal surface of head and upper eyelids dull rust to tan; medial surface paratoid creamy beige, outer surface brown; few paired black spots dorsally; below light gray with numerous cream-colored warts from belly posteriorly into seat patch area; scattering of light pinkish rust everywhere ventrally except underside of limbs & in seat patch area; tubercles on underside fore feet creamy beige except those between palmar & distal tubercles of toes; these pinkish tan; tubercles of underside hind foot dark gray to sooty except group centrally situated which are pinkish tan; line along outer edge of hind foot light orange rust. tarsal fold line cream; posterior surface tibia sooty; dorsal distal surface ~~humeral~~ radio-ulnar region & posterior surface sooty; outer line of creamy beige with few pinkish rust warts; ~~not~~ inner surface radio-ulna cream; side of face & tympanum dark reddish tan; diagonal row of warts on side cream and rusty tan; iris with much gold; wart at angle of mouth, cream.



Rt. eye ant. →

Stebbins, R.
1950

Bufo

Cerbotana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6

RCS5006 - $1\frac{1}{16}$" snout-vent. Color notes from anesthetized animal. Ground color variegated sooty (dark gray) & whitish (ash gray); top of head, in front of dark eyelid bars & paratoid glands cream (pale yellow); numerous light rust (yellowish brown (almost light tan) warts dorsally; belly egg shell white with clear area (without guanophores) light gray, in seat patch region; black blotches on chest & upper abdomen; pupil rather broadly margined with pale yellow; iris otherwise closely & finely stippled with pale yellow.

Stebbins, R.
1950

Hyla crepitans

Corbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19 RCS 4878 and 4879 in banana patch 200 yds SE of camp. John Hendrickson caught one adult on the ground. A few minutes later I got another adult in same general area but 1½ ft. above ground. Animals obtained about 8:45 - 9:00 p.m.

Oct. 20 John Hendrickson & I got 2 adults 15 ft. apart. Both were located by eyeshine, a few minutes after their general location became known by their voices.

RCS 4884 was found about to leap from stalk of mulefat-like plant (see sketch). It was perched 3 ft. above the ground. A quiet pool 30 ft. x 10 ft. x 3-6 inches deep was within jumping distance for hyla. Cloacal temp. 24.5°C; air at position of frog 25.1°C; time 8:30 p.m.

RCS 4885 began to call while we worked on 4884. The frog called 12 times in 15 seconds and again 13 times in 15 sec. This measure is of only a segment of the total series of calls. Each call lasted ¼ to ½ second. The pitch seems about 5 notes above my lowest vocal note. It is a hoarse

Stebbins, R.
1950

Hyla crepitans

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 20 sound suggesting, to me, a guinea fowl. It may be syllabified r-r-r-ch and symbolized ~~~~~ ~~~~~ ~~~~~. Volume increased and pitch decreases slightly at end of call. The call suggests someone violently clearing his throat.

Another adult, RCS 4886, was ~~fast~~ found 1½ ft. above ground in the base of an open bush, within a jump of the shallow stream. Its cloacal temp. was 24.7°C – slight delay in recording. No other individual was present. Animal was about 50 yds. down stream from previous site.

Oct. 22 RCS 4894 & 4895 caught in mouse trap set along N side of pool where 2 animals collected on 20th. Trap placed on mud stripe 6" wide, between water of pool and 1 ft. high overhanging bank. Frogs in amplexus when caught. – female extruding eggs, perhaps due to pressure of the trap bar. Trapline set out at sundown & line checked shortly after sunrise. Both frogs were still live – male hopped away when released from trap.

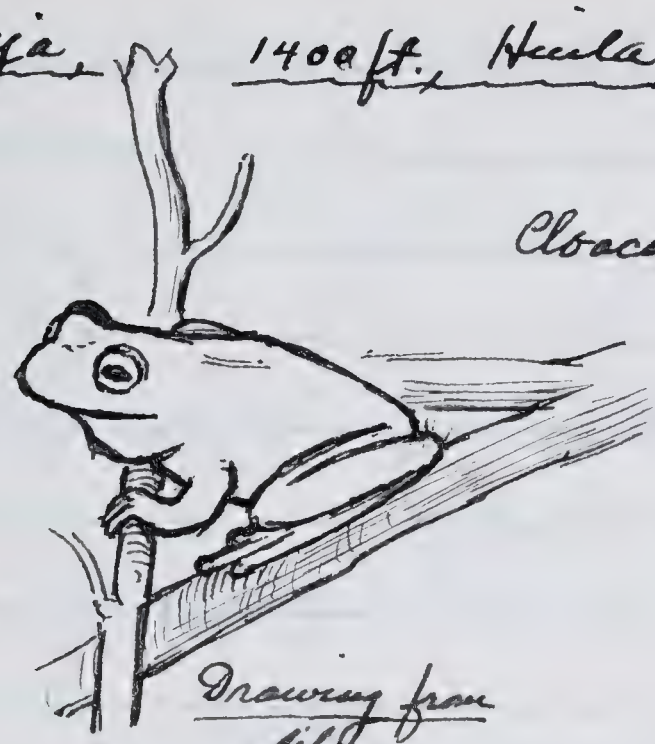
This frog can change color from brown with pattern to almost white (cream) without pattern.

Stebbins, R.
1950

Hyla crepitans

Villavieja, 1400 ft., Huila, Colombia

Nov. 8



Drawing from life

Cloaca 24°C; air at site of frog 1½' above ground 23.5°C; 9:30 p.m. Another individual was found 10 ft. away about 2 ft. above ground on coarse grass stem (See V. Hendricksons notes for further details).

The frogs were within 10-15 ft. of some small open cement tanks filled with water. These measured about 2 ft. square. The collection sites were in a clearing (somewhat overgrown with large, coarse grass clumps) where there was at least one pile of dead brush.

The call of this frog is a guttural, throat-clearing sound. One of the captives called from the collecting sack after we returned to our quarters. It gave a 2 parted call, — — — —.

Nov. 9 Adult at side of pool where small Hyla obtained - 24.6°C (may be a little high - temp. not gotten readily).

Stebbins, R.
1950

Hyla crepitans

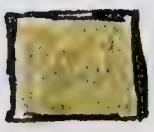
Villavieja, 1400 ft., Huila, Colombia

Nov. 9 ad. ♂ RCS 5030

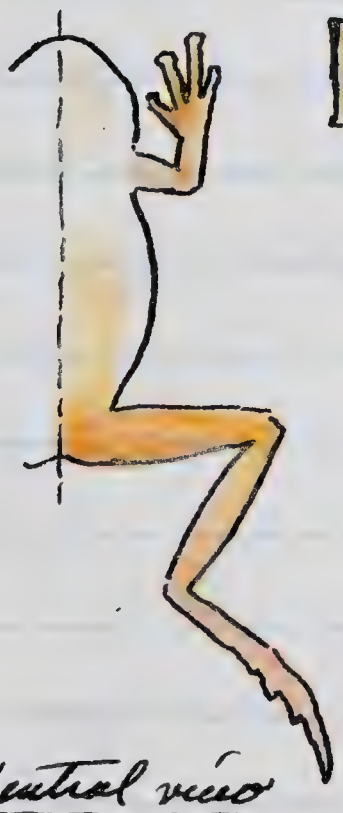
Rt. eye ant. →

Iris silvery with pale copper to pinkish highlights & suffusion of pale greenish yellow in upper, lower, & anterior part

Color of belly



← Color of head (dorsal surface) & central back



Ventral view

Sides ash white to very pale beige streaked vertically with dark brown to black; Tympanum pale purplish gray.

RCS 5044 - Similar to RCS 5030 but no orange on throat and ventral orange generally with less yellow in it.

← Color of dorsum in light phase; no pattern.

Stebbins, R.
1950

Hyla crepitans

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 Found this species ~~in bushes~~ ~~and~~ on the ground and in the water about small rain pool in open, treless, grassy field just NW of the Robuko Franco Institute. Pool described under *Leptodactylus lineatus perplexus* this date. It had rained late in the afternoon. When we went out at 9:00 p.m., the streets were wet.

Individuals were found as follows:- A pair in amplexus at the pool's margin, one at the water's edge partly concealed by overhanging grass, and one about 3 ft. from the water, under a grass tangle. There were several bushes 2 - 2½ ft. high but none was found off the ground, at this pool. The water was clouded with suspended particles (light beige in color).

At a second pool, about 200 yds. to N, across the stream, found 2 other individuals and heard others. See account of *Leptodactylus obscurus* for description of habitat. One animal was about 2 ft. off ground in a Baccharis-like plant; the second was at the pond margin partly concealed by overhanging grass. Only the animals' head was above the surface. John worked within a few feet of him but he did not submerge.

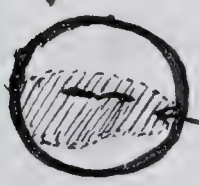
Stebbins, R.
1950

Hyla crepitans

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 ♂ RCS 5058-60 - Adults ranging from 52-59 mm. snout-vent. The sexes are only slightly differentiated externally (5 ♂ compared with 2 ♀) - males have more prominent projection at thumb base and more pointed lower jaw; the gular area of some males is slightly darkened but one male has throat nearly as cream colored as females; females probably average larger than males.

Dorsal ground color varies in different individuals from almost white to light yellow; varying amounts of yellow brown pattern dorsally, especially on anterior back & head; lines on posterior sides yellow orange with central ~~fa~~ brown area to blackish; posterior surface of femur & variegations projecting anteriorly into light color of dorsal surface of femur, yellow orange; tips of toes and web yellow orange; tympanum colored like surrounding skin of head or stands out brownish against yellowish; iris pale greenish yellow with area around pupil silvery gray with pinkish highlights; iris ringed with black peripherally;



Rt. eye.
ant. →

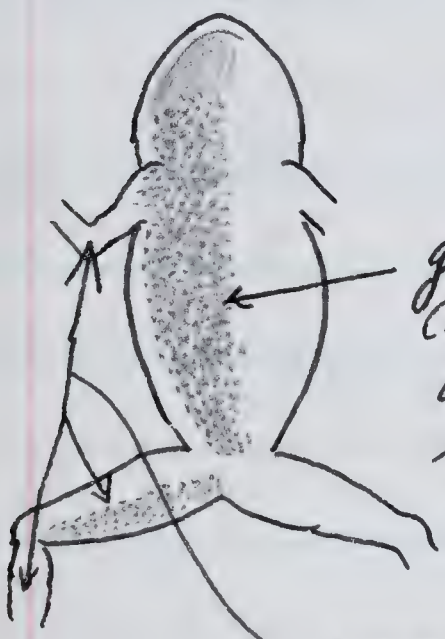
ventral lipoid color ranges from orange yellow to nearly orange (pale);

Stebbins, R.
1950

Hyla crepitans

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 Ventral orange color distributed as for RCS 5030; throats tend more toward cream or pale yellow than in 5030; one male has gray skin between alveolae of ~~throat~~ & chest; alveolae cream to light orange; underside of feet & toepads orange but toepads very light orange to whitish; lipoid color of limbs & venter sometimes broken-mottled, slightly.



guanistic areas (alveolae underlaid with guanic pigment but superficially suffused with orange lipoid color.

guanophore (?) free areas.

Color notes from anesthetized specimens, under artificial light, Nov. 20, 1950.

Nov. 22 Two large adult females kept alive were found to be with eggs, when sack opened today. These animals are JRH 1570-71. ~~The~~ Some sample eggs were saved, RCS 5111. The foregoing females were photographed in color, one dorsal, the other ventral.

Adult found 20 ft. S of stream S of town about
" 8:05 p.m. - cloaca 23.6°C; air 24.8°C at collection site. Animal 2 ft. above ground in bush in pasture.

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 Ad. about 1 3/4" snout-vent, cloaca 20.4°C after about 1 min. delay; 4:40 p.m.

Ad. ♂ 39 mm. - 19.3°C; 4:42 p.m.

Ad. ♂ — - 19.4°C; 4:44 p.m.

Air 15.4°C at 4:45 p.m., 6" above ground; overcast; slight breeze. Water 20°C, 1 ft. from shore, at 1/2" depth.

Ad. - - 19.0°C; 4:50 p.m.

Ad. ♂ 36 mm. 18.5°C; 4:52 p.m.

Ad ♀ 40 mm. 18.6°C; 5:00 p.m.

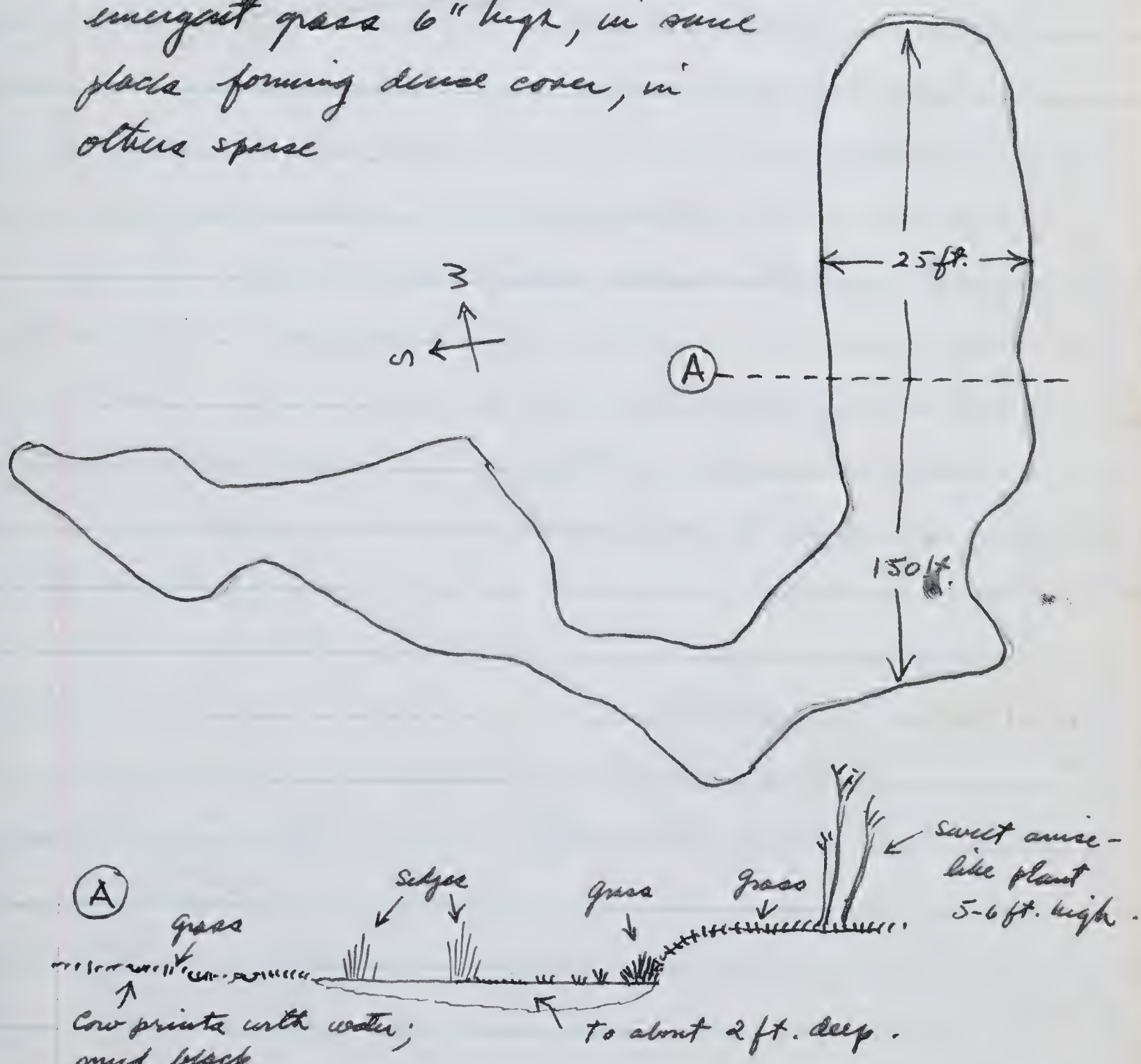
↑ Sex ↑ snout-vent length ↑ cloacal temp. ↑ time

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 North or NW city university grounds on flat W of Bogotá. Green pasture land, mostly flat but with scattered hummocks 3-4" to 3' high. Pool 25 ft. wide (see sketch for length). Water largely encircled by floating water plant suggestive of duck weed. This plant is most colored. Scattered clumps of sedge, sparse & to about 2 ft. high; emergent grass 6" high, in some places forming dense cover, in others sparse



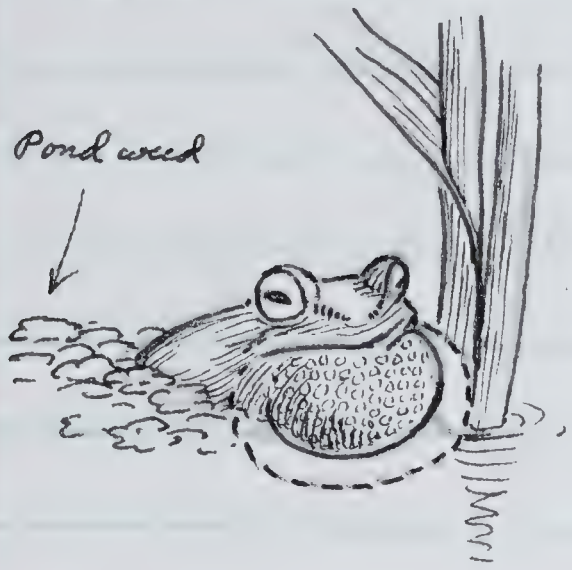
Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15

Voice



Gular pouch appears almost round in lateral aspect and an elongate oval in frontal view (as seen in sketch). When partly inflated closely set small round white alveolae appear in dull green background; one individual possessed a pouch that tended toward brownish basally (when expanded). When calling, the basal portion of the pouch is in contact with the water (2 animals observed). The pouch is thrust forward about $\frac{1}{8}$" inch with each call & drawn back to a resting expanded position. The sides contract sharply as the pouch expands.

Individuals

① 16 calls in 15 sec. - - - - - - - - - - - - - -

② 19 " " " Calling not regular; might be represented as dotted line.

Duration of call $\frac{2}{5}$ to $\frac{3}{5}$ sec.

② 17 in 15 sec.

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 The call is nasal, hoarse, unmusical, with no whistle quality. It might be syllabified as ~~rumuh~~ ruh ruh ruh. It is all on one pitch. They may be a range of 1 or 2 notes in pitch. Occasionally a sighing, hoarse note with rising inflection, lasting a second or so, is given.

A distant chorus of these frogs suggests a cross between a *Hyla regilla* and *Scaphiopus hammondii* chorus.

Lowest note 2 notes above violin D and high one 5 notes above violin D, a range of 3 notes. This whistled note is much camouflaged by a coarse, grating note. The call can be suggested (but not well imitated) by a straight vocal sound or perhaps better a mixed vocal & whistled sound as used to imitate *Hyla regilla*.

Stebbins, R.
1950

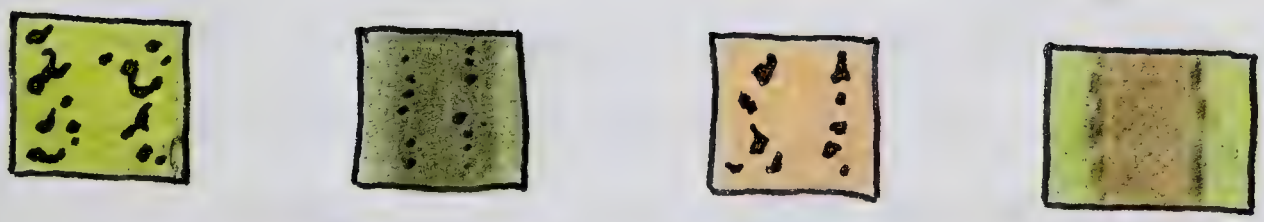
Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15

Ad. ♀
46 mm., snout-vent.

Ad. ♂
37 mm., snout-vent.



Variation in dorsal pigmentation in *Hyla labialis*.

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 Ad. ♀, 46 mm. snout-vent. — Above uniformly dark green with slight lightening to light green (almost yellow green) in line from nostril, along outer edge of eyelid, over tympanum, and in vague broad band dorsolaterally; powder blue color showing at axilla, groin, posterior part of femur and on inner side of upper surface of hind foot, when animal viewed from above; below belly with very pale powder blue alveolae, margined with black; dull greenish gold suffusion across posterior part of chest region; throat & anterior part of chest yellow green; upper & lower lips edged with black, lower lip concealed by upper when mouth closed; under side of fore & hind feet deep blue gray or nearly purplish black; under side of fore & hind limbs powder blue; iris bronze; no eye mask; black ring around eye and black line at edge of upper lip contrasts with uniform green of side of head. (JRH 1537)

Rt. eye
ant. →

Ad. ♂, 39 mm. snout-vent — Above uniformly green; generally like ♀ but less intense blue ventrally; chest yellowish tan grading posteriorly into cream (posterior chest); lavender on belly and under side of femoral region, grading peripherally

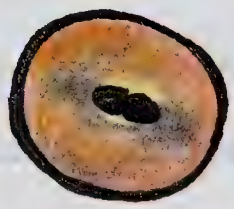
Stebbins, R.

1950

Hyla labialis

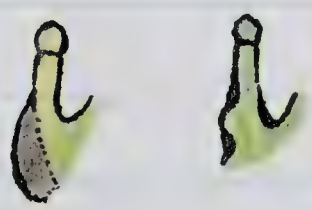
Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 in these areas to powder blue; chin yellow cream; loose skin of throat olivaceous grading into beige or tan on chest (where skin also loose).



Rt. eye
ant. →

The female of this species is readily distinguished from the male as follows: Male with lavender or tannish venter; venter of female powder blue to indigo blue (almost); venter of female with black spots, sometimes faint; males ~~a~~ lack spotting of belly; throat of male discolored – olive, olive green, yellowish tan or yellowish brown; skin loose, longitudinally folded – loose posterialy to area between fore-limbs; throat skin of female not loose, greenish yellow to yellow green; male with swollen thumb base. (Foregoing based on 11 adult males and 3 adult females, anesthetized in chlorotone).



♂ ♀

Rt. thumb in dorsal aspect.

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Nov. 15 There is considerable variation in dorsal pigmentation — from very pale yellow green to dark green; one individual in lot of 11 males was pale bronze with broad dorsolateral pale yellow bands; another was brownish bronze anteriorly, green posteriorly & bronze on the hind legs; some individuals have numerous black markings, others a few, some none, dorsally

Stebbins, R.
1950

Hyla labialis

Bogotá, 8500 ft., Cundinamarca, Colombia

Dec. 6 Obtained 2 adults, water 18°C; air 18.4°C
4" above water, 10:55 a.m.

Stebbins, R.
1950

Hyla microcephala

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 Call cricket like, suggestive of Acris gryllus.
Starts about 2 octaves above violin G.
A prolonged note (mmm) is given suggesting sound made by running finger over pocket comb, a squeaky hinge or the drawn out click of a focal plane ~~reflex~~ shutter camera operating a slow speed.

mmm — mmm mmm
3-5/10 per sec. ½ sec.

- - - - - - - - - - About 10 short notes may be given in series but number of shorts
1 sec. or to 1½ sec. ranges from 1 through 3 - 5 - to 10.
Sometimes only prolonged note given.
" prolonged note + single short notes of quality somewhat similar to prolonged note but with more of a ring. The end of a series of notes seems to go down slightly in pitch & volume.

mmm mmm mmm — mmm — —
mmm — — — — mmm — — — mmm.

Variations in calls

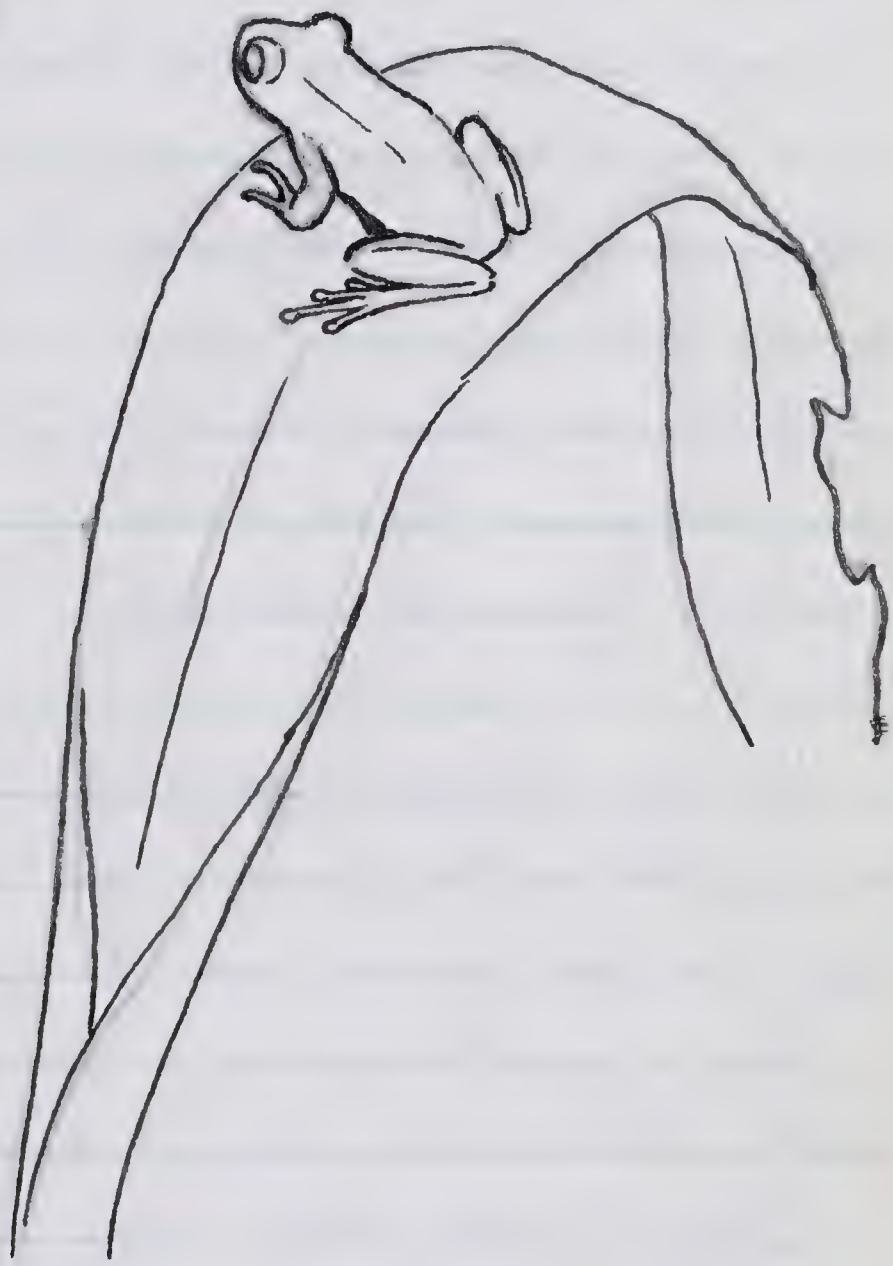
I found I could best imitate this frog by drawing fingers over small teeth of pocket comb, the first stroke a long one, followed by short scrapes.

Stebbins, R.
1950

Hyla microcephala

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 Air 24°C, about 10" above water; water 26.8°C.; 7:00 p.m.



Drawn from life.

Animals in pool 150' x 15' x 3 ft. deep - slough situation - overflow area of river. Pond grass in pool to 1½' high. Banana patch on one side. River bottom growth with vines on other side. These trees on N side overhang pool. Open to S. Grass blades to 1¼" wide.

~~Throat~~ Throat pouch seen by Hendrickson described as hemisphere a darkly pigment to some extent.

Stebbins, R.

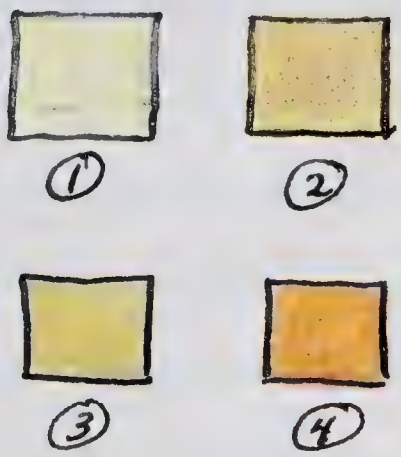
1950

Hyla microcephala

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 RCS 5041 – 43 & 46 – 48.

Considerable variation in color of dorsal surfaces; evidently can change color from cream (1) yellow ocher (2); dorsal color darkens on upper surface of head to tan or light purplish brown; upper surface distal segments of hind limbs colored like lower back; upper surface femoral segment varies from yellow orange (4) to yellow (3); upper surface fore limbs colored about like upper surface distal segs. hind limbs; dorsal color of body lightens along a narrow line where color changes to light yellowish gray or purplish gray of sides; this color deepest next to light dorsolateral line but nowhere dark; vague vitta present, continuous with slightly darkened upper sides; iris brown to gray; throat white or yellow, probably depending on sex; chest & belly white (guanistic layer); underside of limbs light pinkish orange; toes yellow to yellow orange. In individual with tan eye, under magnification eye appears variegated brown & pale yellow; in gray eye, less brown and light color tends toward silvery. Foregoing notes based on 6 adults anesthetized in ~~chlo~~ chlorotone.



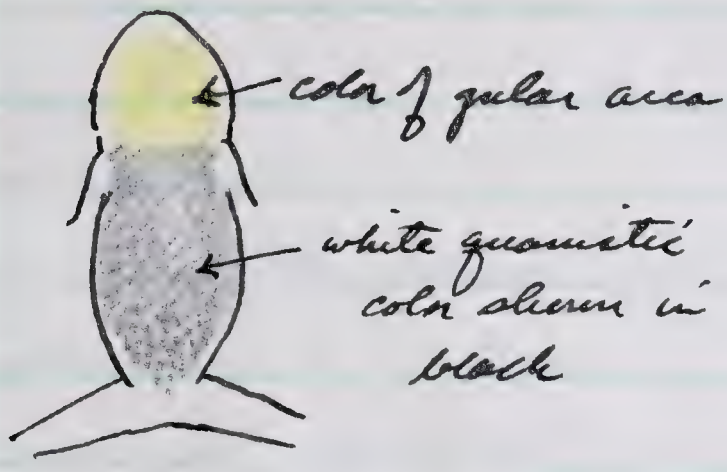
Stebbins, R.

1950

Hyla microcephala

Villavieja, 1400 ft., Huila, Colombia

Nov. 9



Stebbins, R.
1950

Hyla microcephala

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 This proved to be the *Acris*-like (as to voice) frog heard last night as we returned from the army base.

The little fellows were found on the stems of plants and on leaves of bushes about the rain pool described under *Leptodactylus ocellatus*, this date. They appeared orange in the light of our head lamps. John Hendrickson found a pair near the surface of the water in amplexus. They were in a bush. None was seen in the water.

When we first came to the pool they were timid about calling and would respond to no attempts at imitation (very crude – the call is difficult to approximate). I tried hitting rocks together, so useful in stimulating *Acris*, but this also failed. After about ½ hr. of work about the pool they would call even when we had our lights on, and once several called from the fronds of a Bacharis-like plant beneath which we were searching for another species of anuran. Our lights were on.

I found one individual 4 ft. above the ground resting on a leaf of the Bacharis-like plant. The animal had its vocal sac, which was round and semitransparent, inflated. The caller was about 20 ft. S of the pool.

The call is cicada-like in quality.

Stebbins, R. *Hyla microcephala*

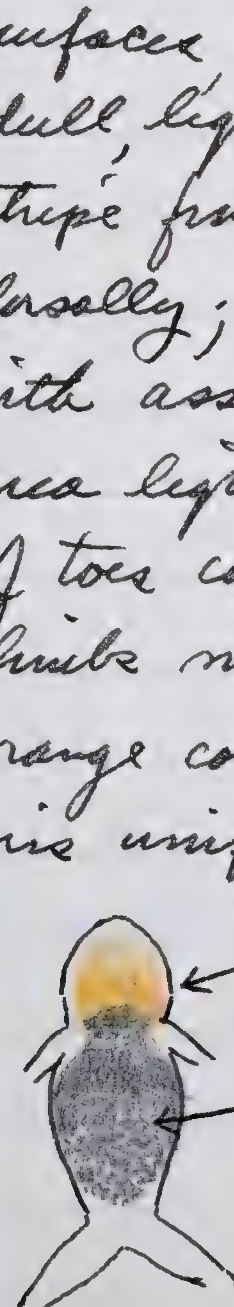
1950

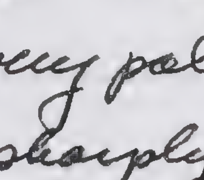
Villavicencio, 1600 ft., Meta, Colombia

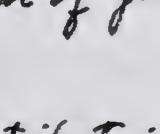
Nov. 19 It is a rapidly given series of notes on one pitch. ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿ ‿.

Nov. 20 Heard calling refractorily in broad daylight (about 10:30 a.m.).

Nov. 19 ♂ RCS 5065 – 23.5 mm. snout-vent – Above very pale yellow dorsolaterally grading gradually into very light brownish suffusion centrally; upper surfaces of limbs colored like dorsolateral surfaces except femoral region which is dull, light, yellow orange; very pale lavender stripe from snout to groin, sharply defined dorsally; belly pale yellow – guanistic pigment with associated yellow lipoid (?) color; gular area light orange; dorsal and ventral surfaces of toes colored like gular area; underside of limbs non-guanistic, very light orange pink, orange color predominating in femoral region; iris uniformly metallic orange.







Stebbins, R.
1950

Hyla microcephala

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 RCS 5066 & JRH 1570-71 photographed in cola, Nov. 22, 1950. All closely fit description of RCS 5065. Males have yellow orange throats; females, pale yellow throats, without loose skin.

Stebbins, R.
1950

Hyla minuta

46 Kms. S, 22 Kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 25 RCS 5136, 23.5 mm. snout-vent – Above yellowish brown with brown dark markings; vague rusty streak on either side in scapular region; upper surface fore limb in elbow region light tan; anterior basal half of femur, rust orange, rust in groin; posterior distal half of femur, rust orange; proximal half of inner & posterior part of tibia, rust orange; few rust flecks on dorsal surface of head; below pale beige grading to whitish on chest & throat where mottled with dark gray; iris silvery gray above & below pupil (with pale beige coat); reddish rust horizontal bar through pupil.

This is evidently the same species as JRH 1581. General skin pigmentation and eye color are similar to RCS 5136. Above notes made in daylight from anesthetized specimen, Nov. 26, 1950.

Stebbins, R.
1950

Hyla pseudopaucifa

Buenavista, 4000 ft., Meta, Colombia

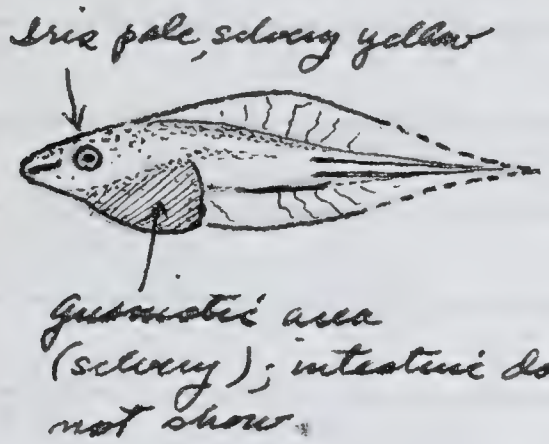
Nov. 21 The adult & a transforming individual (RCS 5099-5100) were found in my dip net after a sweep through the water and an emergent plant growth at the E end of the reservoir, described under Leptodactylus ocellatus this date. Tadpoles, presumably of this species (RCS 5114) were gotten in the same part of the reservoir. An adult Hyla, probably of this species, was found resting on the upper surface of a leaf of a bush, below the dam. It escaped.

Stebbins, R.
1950

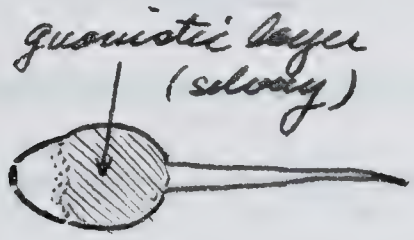
~~Hyla pseudopaphia~~

Buenavista, 4000 ft., Meta, Colombia

Nov. 21



Ground color of dorsum, light yellow (olive yellow), brightest toward snout; dorsal tail musculature very pale yellow; lower part unpigmented, translucent, whitish; no guanophore can be seen dorsally.



RCS 5114.

RCS 5099, 27 mm. snout-vent, adult, presumably of this species. Dorsal surface of head and body mixed pale yellow and brown in kind of salt & pepper style of coloration (general aspect, yellow brown); femoral region, above, orange yellow; tibial region beige with brown transverse stripes; outer surface of tarsal region & foot, beige; fore limbs beige with brownish cast; throat yellow with faint orange cast; under side of hind limbs, toes, including palm & inner upper surface of hind foot, orange yellow; under side fore limbs very light gray; chest & belly yellow cream; iris colored like head skin, pale yellow & brown.

Rt. eye ant. →

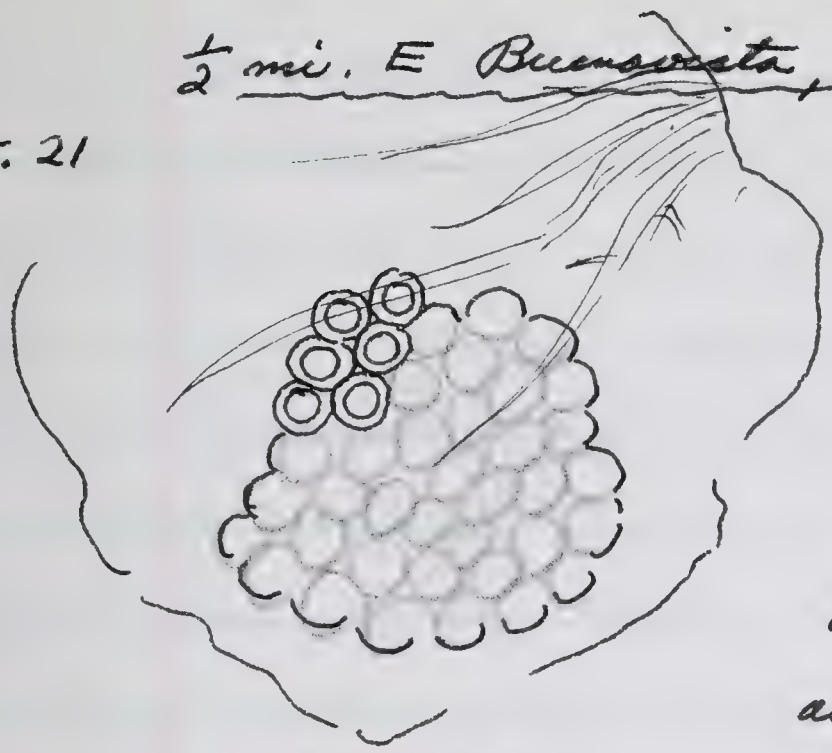
Distribution of ventral guanistic pigment as in ~~H. meesciphila~~ from Villavicencio.

Stebbins, R.
1950

Hyloxalus granulicentris ?
Prostherapis punctata ?

½ mi. E Buenavista, 3100 ft., Meta, Colombia

Nov. 21



RCS 5068

Damp (wet) sandy, silty soil near cluster 20.2°C; 9:15 a.m.; air 21.6°C, 3" above ground in shade.

Eggs 1½' from water, 2" above water level, attached to wet rock, 45° L, facing SE. moss covered & bare rocks. Area well shaded; canopy 80 percent, permanent. Pools with moving water & cascades, nearby. Ravine 15 ft. across here, 3 - 4 ft. 60° banks. Much broad leaf vegetation & vines. Water of stream 19.7°C
Ova dark brownish gray - yolk plug stage; yolk white.

Prostherapis pulmatus
Hyloxalus granulventris
Sandrotatus punctatus

Stebbins, R.

1950

Buenavista, 4000 ft., Mita, Colombia

Nov. 21 Canal 1½' wide, 2½" deep, ¼+ mi. long; water 19.6°C; air 6" above ground, E slope in shadow, 22°C; 4:05 p.m.. Slope 35° to E. Second growth on slope, to about 20 ft. high. Five of these frogs (RCS 5070-74) were collected along the canal. Many others were seen. Some were seen swimming, some perched on leaves of aquatic plants or on the banks. They are agile frogs.

♀ RCS 5071, 37 mm. snout-vent — Above light brownish gray to dirty beige, with dark gray to blackish blotches; limbs, especially hind limbs ~~was~~ with rusty beige suffusion; gray stripe through eye & continued broadly to groin (black overlaid by close, whitish guanophore stippling); iris beige with beige pupillary ring; all ventral surface with whitish guanistic layer; throat clouded with gray & pale gray mottlings on underside femora; yellow on posterior surface of tibia, on anterior surface of femur near its base and two yellowish bars in front of groin on sides, lower one below edge of dark pigment of groin; bright yellow patch on posterior base of forearm; light beige postocular streak extending to shoulder; under magnification, light color of dorsum seen to be composed of closely set, pale gold, metallic flecks.

Stebbins, R.
1950

Hyloxalus granuliventris
Dendrobates punctatus

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 ♂ RCS 5080, 34 mm. snout-vent – Similar to RCS5071 but dorsal coloration rust brown and dark spots smaller & fewer; yellow marks inguinal more intense & touch of yellow on posterior surface femur; less dusky on throat & on underside forearm.

♂ RCS 5079, 32 mm. snout-vent, as RCS 5080. All 3 animals have conspicuous small white (guanistic?) tubercles below vent & on posterior surface forearm.

A series of these frogs was collected by Carlos Velasquez. These are RCS 5079–5088. I do not know the precise area, about Buenavista ranch, where he got them.

RCS5095 was taken immediately south of the Buenavista ranch house.

Stebbins, R.
1950

Hyloxalus granulicentris

Nov. 21

Buenavista, 4000 ft., Meta, Colombia

Immediately S of the ranch house, in a pasture through which the aforementioned canal flowed, John and I attempted to locate individuals that were calling, by triangulation. We were unsuccessful because they called from along the canal and no doubt took to the water on our approach. Plant growth was heavy, though only 6-8" high.

I timed the calls of one individual as follows: 13, 11, 11, 12 seconds (each figure represents the duration of a single call). Intervals were not timed but seemed at least as long or longer than the calls. The pitch checked with a violin pitch pipe was 3 notes above violin A (the A string). The pitch seems to be constant as is the force or volume of the call. The call consists of a rapid series of nearly clear whistled notes of uniform speed. The call can be imitated well by whistling the above note and slapping or tapping the relaxed cheek as rapidly as possible, with a free wrist movement.

We found 3 of these frogs at a shallow puddle formed by drip from a trough that carried water from the canal to a reservoir tank. The trough was 7 ft. over head. There was a rock retaining wall nearby, into which the frogs retreated. They crawled into spaces between the stones but were extracted with forceps. A calling individual

Stebbins, R.
1950

~~Bufothamnus pulchrum~~
Hyloxalus granulicentris
~~Dendrobates pumilio~~

Buenavista, 1600 ft., Meta, Colombia

Nov. 21 vibrated its throat but there was no expansion into a gular pouch. This animal was nearly black + had yellow bars in front of the groin & yellow color on the femur and posterior part of the tibia. A gray individual with sooty spots, not calling, was probably a female.

Stebbins, R.
1950

Phyllomedusa hypochondrialis

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19

Ventral aspect Dorsal aspect

Drawing natural size,
from anesthetized individual
RCS 5069

Individual collected by John Hendrickson. See his notes, this date. Photograph, in color, taken Nov. 22, 1950.

Stebbins, R.
1950

Eleutherodactylus ovalis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6

(1 4/5) - 25 - (1 4/5) - 25 - (1 7/10) - 16 - (2) - 17 - (2) - 14 - (1 8/10) - Number in parenthesis, length of call in seconds, other number length of interval between calls.

1 8/10 - 2 - 1 8/10 - 1 8/10 = Duration of a number of individual calls

| 1 - 15 - 30 - 46 - | 62.8 ~~[illegible]~~ - 17.2 - 31.6 - 46 - | 7.8 = Duration of intervals from call to call, measured to opening note. Vertical line marks out minutes.

7:02 p.m. - air temp. 26.3, 6" above ground.

Pitch - 2 notes above violin G.

Slight flattening of note at about midpoint & continued to end of call.

Imitate by drawing corners of mouth back in smile & say Bēēēēē or Wēēēē (ē long, nasal & hard); a sharpened vocal sound. Call is nasal, metallic, somewhat like door buzzer.

Water 26.8°C where animal calling; air 1/2" above water at calling site - 25.7°C; 7:38 p.m.

Animal found sitting in water 1/8 - 1/4" deep beneath rather dense tangle of grass. Difficult to locate. John Hendrickson & I triangulated on call 3 times before animal finally located.

Stebbins, R.

1950

Elachistocleis ovalis

Carbotana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 RCS 5021 - 41 mm. snout-vent.

Dorsal view

Ventral view

↙ Arrangement of dorsal guanophores (shown in black); these lie over black ground color; to unaided eye dorsum appears blackish with extensive hoary suffusion and with scattered small ash white spots; iris beige [dark brown with beige guanistic (?) stippling - shown in black in sketch]

Orange areas, ventrally and on limbs seem to be extensive guanistic beds overlaid or impregnated with yellow to orange lipoid color; in some places orange color seems only to overlie or impregnate a portion of the guanistic bed, leaving small areas of silvery white.

Stebbins, R.
1950

Elachistocleis ovalis

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 ~~RCH~~ RCS 5049 - Similar to RCS 5021 except more reddish color shows on upper surface femoral region. 40 mm. snout-vent.

Call fits earlier description. Animal seemed to respond to John Hendrickson's ēēēēēēēēēēē note, given with nasal quality and all on one pitch. The response was delayed, however. We got animal about 8:00 p.m., after 15-20 min. of triangulation. The frog called even when we were within 1-2 ft. of it (We were sitting quietly, with lights out).

The animal sat on saturated soil at pool margin on light brown mud. Green grass largely concealed animal. Grass about 6-8" high here.

Stebbins, R.

1950

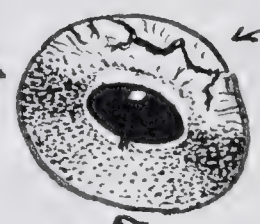
~~Hylorana~~

Leptodactylus lineatus

Carbotana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 ♂ RCS 5022 - 2 1/4" snout-vent. - Broad dorsal stripe very light beige; ground color beige above; spots brown & gray brown; narrow dorsolateral folds cream; median ~~dorsolo~~ ridges on either side of vertebral stripe also present; tympanum dark brown; throat white with purplish sooty area on either side; chest & belly pale yellow; underside limbs pale gray; purplish red blood vessels conspicuous on under side femoral areas of limbs

Distribution of ventral granular layer.



Pupillary margin pale yellow above, light pink below.

Rt. eye ant. →

Stebbins, R.
1950

Leptodactylus lineatus pseudopaphus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 As we walked from the hotel Meta S toward the Roberto Franco Institute, we became aware of a clear, whistled note, to my ear indistinguishable from that given by Leptodactylus lineatus at our Cerbitana Camp in the Magdalena Valley. We walked out into a grassy field with scattered bushes (to height of 2-3 ft.). There were a number of pig wallows, especially near the road, where the ground was without obvious plant growth, due to the trampling and rooting of these animals.

We found the frog (RCS 5064) by triangulation at the margin of a pool 10' x 4-5' x 6" (?) deep. The animal was at the water's edge down among the basal stems of the grass. He was well concealed.

The animal readily responded to a whistled imitation of its voice, even when we attempted this at a distance of 6-8 ft. from the frog.

The frog was obtained about 9:45 p.m. Other callers were well spaced over the field. There was not chorus or chorus concentration of individuals.

Hyla crepitans was present, ~~to~~ and what was thought to be Microhyla, was heard.

Stebbins, R.
1950

Leptodactylus bufonius perplexus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 Heard this frog calling near river S of town. The note is a clear whistle, with rising inflection. It ranges through about 1 octave. The lowest part of the call is about 11 notes above my lowest whistle. The sound has a liquid quality. / / / /.

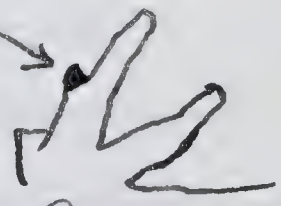
Stebbins, R.
1950

~~Leptodactylus mesjo~~

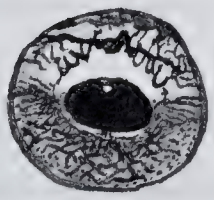
Rana palmipes

Villavieja, 1400 ft., Huila, Colombia

Nov. 6 JRH 1502 - Dorsal ground color beige with brown blotches edged with cream or very light beige; blotches along dorsolateral folds and on sides dark brown to black (lower sides); ground color lightens on lower sides to near dirty white; tympanum uniformly dark brown; dark markings in vitta region nearly black; upper surface forelimbs same color as dorsum of body (body slightly darker in central area between dorsolateral folds); upper surface hind limbs beige gray cast; groin (and area on body in front of groin & on ~~tibia~~ femur) pale greenish yellow; similar color on posterior surface of femur but becoming yellow more ventrally; ventral surfaces cream to white with small dark specks of dark gray on legs; small stippled area on chest (nuptial excrescence) & black tubercles on thumbs



Dorsal surface.



Rt. eye
ant. →

Light area in upper iris pale gold; lower iris dark brown; most lower pupillary ring & light areas of lower iris most (general impression brown)

(4" snout - vent)

Specimen collected Nov. 5, 1950

Stebbins, R.

1950

~~Leptodactylus mystax~~

~~Rana palmipes~~

Villaviejo, 1400 ft., Huila, Colombia

Nov. 8 Large adult, cloaca 25°C, gotten about 9:30 p.m. in same area where Hyla crepitans gotten this date. This frog is an active, very rapid jumper. This individual, RCS 5031, is like JRH 1502 in coloration. It was photographed.

Nov. 9 Large ad. 24.3°C; 24.5°C - substratum of mud.; air 24.2°C; 8:00 p.m. (RCS 5050).

Stebbins, R.
1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19-20 On both evenings these frogs were heard from nearly every water source. A big chorus was heard both evenings from a flooded banana patch 100-150 yds. S of camp. The evening of the 19th we ~~also~~ went out with headlamps and by triangulation got several. They are not easily found. Fortunately they respond readily to an imitation of their voice. I can best imitate them by using a *Hyla regilla*-like tone (whistle and vocal) with rising inflection.

Oct. 21 An individual calling from a puddle near the railroad track called as follows: 19 calls in 15 secs., 18 in 15 secs., 19 in 15 secs. The duration of a single call is about $\frac{1}{3}$ to $\frac{1}{2}$ sec. Time 6:00 p.m. Sun had just set.

Oct. 22 Perico and Paulino caught a considerable number of these frogs this evening in the flooded banana patch 150-200 yds. SE of camp. Some of the frogs were calling from beneath ground.

Stebbins, R.
1950

Leptodactylus mystacinus

Cubatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 ♂ RCS 5023 - 43 mm. snout-vent.

Uniformly beige above with vague olivaceous marking; dorsolateral ridges not as evident (or largely absent) as in other species; tympanum brown; longitudinal streaks on rear of thighs pale yellow; postocular bar & ring around tympanum pinkish white; below colored like RCS 5022.; slight tinge of yellow in groin; distribution of iris pigment about as in 5022 but patch in upper iris is distinctly pink (in sunlight).

Stebbins, R.

1950

~~Leptodactylus ocellatus~~

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6

5 sec. 5 sec. 5 sec

5 sec. 5 sec. 5 sec. 5 sec.

5 sec. = 53 calls in 40 sec.

Duration of individual call between 1/5 & 2/5 secs.

Call ranges from violin A to E in a slurring clear whistle with rising inflection; there is along with this an undertone, ~~not~~ less audible at several hundred yards. Call best imitated by mixed whistle & low pitched ~~whistle~~ hum (steam boat whistle).

Range in pitch of different individuals seems to about #3 notes, the terminal note of a low pitched animal exceeded by 3 notes by terminal note of high pitched individual.

High pitch individual called 70 times in a min.

Low " " " 59 " " " " .

Foregoing in chorus in banana patch. Individuals seemed to be well spaced 20+ apart

This later proved to be a comparison between what seemed to be two distinct species, a stupid larger one with high voice lacking undertones & a smaller, unstupid one with lower voice & distinct undertones.

Stebbins, R.
1950

Leptodactylus ocellatus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 This frog gives a single chirping note that reminds me of the single call note of our western meadowlark. The animal we collected (RCS 5063) called persistently even though we moved the grass over his head and flood lighted him with 2 brilliant head lamps. He was at last found in a water filled pit in dark brown mud at the base of the grass. The pit was about 2½ across and was situated about 1 ft. from the margin of a pool 8-10' X 12-15' and perhaps 10" deep. Dense grassy growth 8-10" high grew to the pool's margin. A long fronded Backaris-like plant grew on one side of the pool. A small orange Hyla called from its branches and a dark green Dendrobatid-like frog was found in it.

This rain pool was situated to one side of a little used grass overgrown road that forded the stream. The stream was about 40-50 ft. to the SW. See account of [illegible] for a description of the stream.

Other individuals were heard but not found. One of these frogs was startled out of the grass under my feet. It hopped to the shallow water at the edge of the pool where it sat until I tried to clap my hand over it, whereupon it leaped into deeper water.

Stebbins, R.
1950

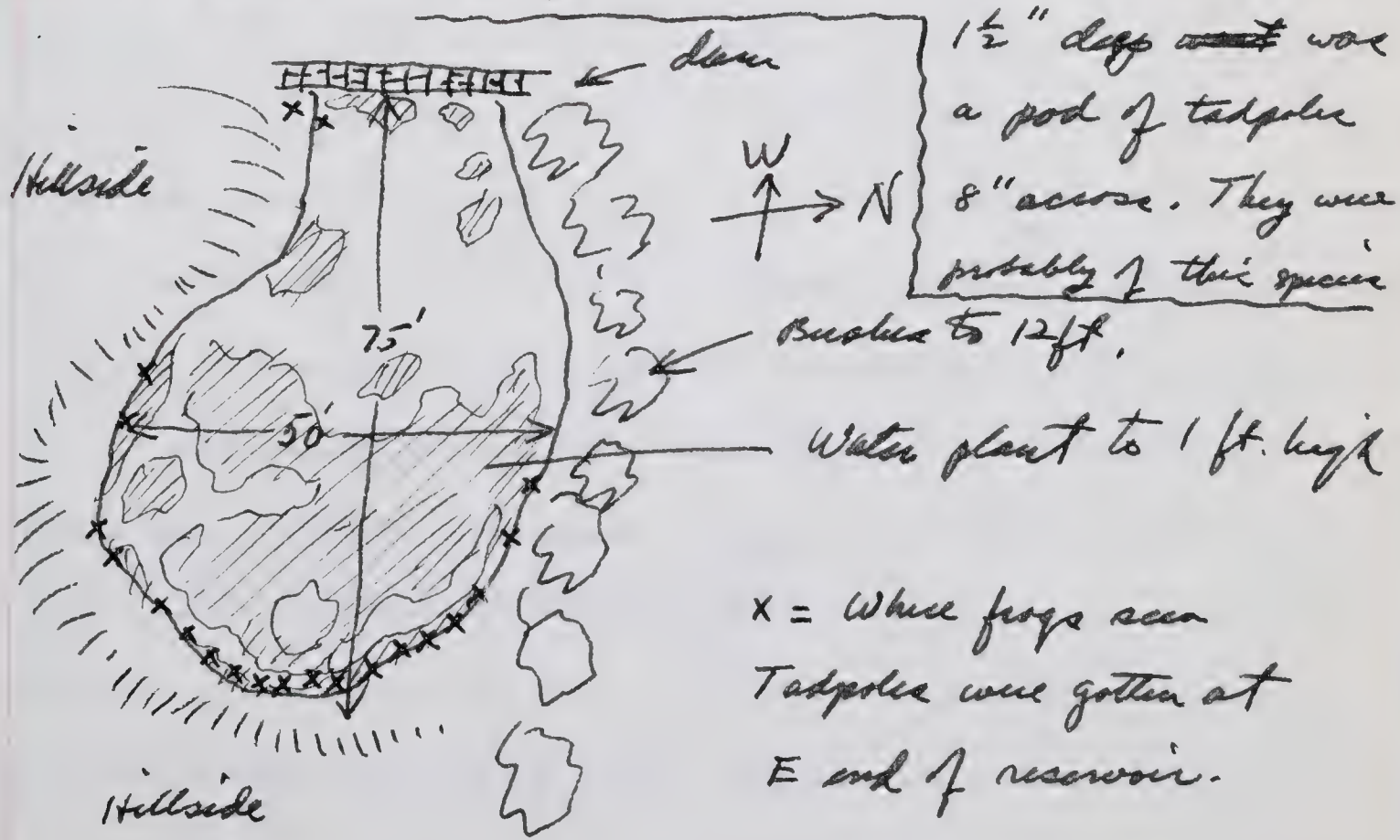
Leptodactylus ocellatus

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 Around similar pools in an open field to the S, on the other side of the stream could be heard the clear, whistled chirping of Leptodactylus fuscus but none of these was heard about the fermenting pool.

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 A frog, evidently of this species was abundant about margins of small reservoir. The call note was like that of the western meadowlark. Water temp. (2" deep) near surface at 2:50 p.m. - 30°C; air 3" above ground in my shadow 25°C. Three kinds of tadpoles seemed to be present and there were at least 2 kinds metamorphosing - one a hylid-like frog. At one place, in water 1½" deep ~~out~~ was a pod of tadpoles 8" across. They were probably of this species.



Air view

Stebbins, R.
1950

Leptodactylus podicipinus

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 Soil light brown, damp, temp. 25°C; 10:50 p.m.; air 23°C. Frog (RCS 5101) looks like leptodactylid. Open, rocky ridge at side of cow path. Grass 2-8" high; scattered bushes to 2 ft.; heavy jungle (cloud forest?) 50 ft. to W (covers W slope). 50 yds to E, as far as I can see, like area where frog found. Small rain pools 30 ft. down 10° slope. Pools 12" x 6" x 1½" deep.

Another individual (RCS 5102), 10 ft. up slope from first, in cow path, under rock 4" x 3" x 1", soil moist, 23.3°C. Frog about 1" in snout-vent length; 10:55 a.m.

Found individual about ½ - ¾" long in same gully where bufonid found, about 20 ft. up slope. Gully drains to W, angle about 10°. Crest of hill 40 ft. to E.

RCS ~~5a~~ 5101, 34 mm. snout-vent — Olive gray above, slightly lighter triangle on head (see sketch); vague dorsolateral folds reach to sacral hump area; throat pumpkin brown with whitish flecks; chest cream; belly light yellow; underside limbs light grayish beige; underside feet sooty; bar on posterior surface femur, light yellow; groin with very pale yellowish suffusion.

Rt. eye.
ant →

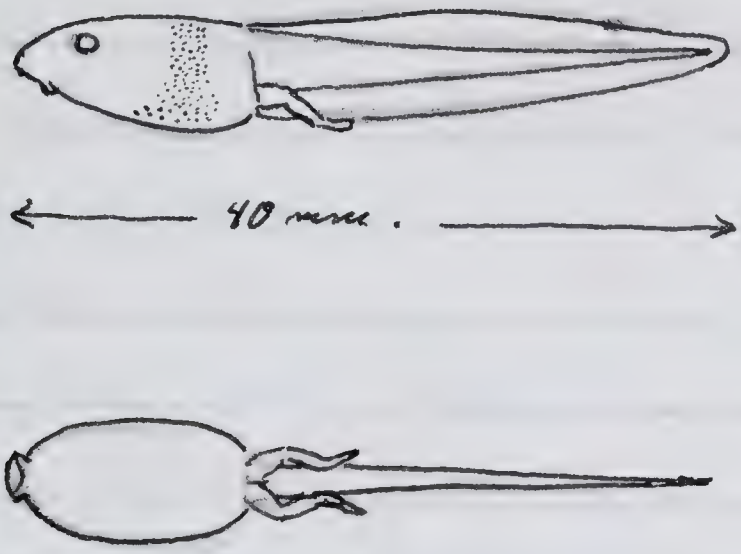
Dark markings = orange to beige metallic color

Stebbins, R.
1950

Leptodactylus ocellatus ???

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 RCS 5112



Iris with very pale gold pupillary ring and vague lighter marking peripheral to ring; very dark, almost black body covered with very fine, closely set, pale yellow (?) stipple of guanophores (?); guanophores larger & slightly more widely spaced ventrally; ventral surface sooty brown; intestine shows clearly; tail musculature & membranes gray, musculature darkest dorsally.

Smaller toads, 25 mm. in length, are similar in form. They differ in being lighter — sooty gray (head-body) and gray (light) tail; black eyes are conspicuous; no guanophores detected.

Foregoing notes with artificial light and hand lens.

These tadpoles were found at E end of reservoir described previously. The large one illustrated above (including one or two others) were solitary but numerous smaller toads (25 mm. ±) were found in pool about 8" across, at edge of reservoir.

All these tadpoles were dead next day but toads, RCS 5113 survived. Animals in same jar (1 pint).

Stebbins, R.
1950

Leptodactylus obscurus ?

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 RCS 5096 - 49 mm. snout-vent - Above dark brown; beige triangle on head, apex formed by snout (where darker) and two other angles at central edge of eyelids; forelimbs orange brown above; hind-limbs with sooty & dark beige markings; throat purplish sooty; chest gray and cream, variegated; belly light yellow with few gray flecks; underside femoral region dull light orange; underside rest of hind legs light cream with beige cast; underside feet sooty; iris gray, silvery pupillary ring & vague silvery zone in upper part; orange buff bars on upper lip & postocular bar orange buff; tympanum colored like rest of head; orange buff flecks (few) on posterior surface femur.

Notes about 20 hrs. after death; odor of decomposition; colors still seemed as in field.

Photographed JRH 1573, Nov. 22, 1950, in color. Ventral view of another specimen in same photo.

RCS 5096 - 98 collected about E margin of reservoir described earlier. RCS 5101-2 were taken under stones along cow path, 100 yds. S of ranch house (Buenavista).

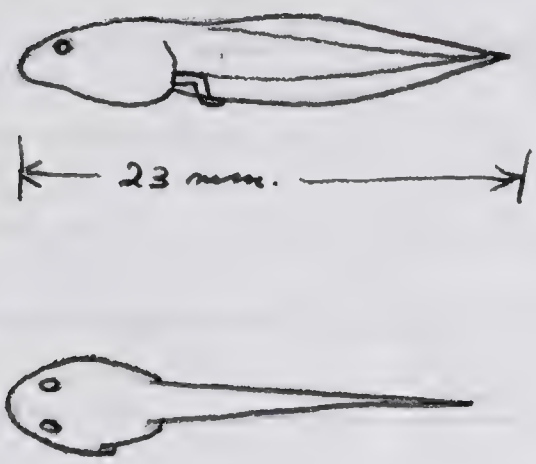
Stebbins, R.
1950

~~Leptodactylus ocellatus~~

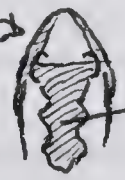
5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23

JRH 1603



Dorsal surface of tail with light sooty markings; white guanistic clusters interspersed with sooty markings, of similar size & shape; ground color of tail dull pale orange; ground color above olive, under magnification, numerous closely set pale yellowish to gold guanophores overlying blotchy sooty color; intestine gray, clearly visible, overlaid with scattered blotches of pale yellow guanophores; guanophores stippling (irregular) on posterior throat - grayish to white; ground color of throat gray; irregular pale gold stippling of venter grades along sides with more grayish, more nearly uniform stippling of dorsum; iris with fine gold pupillary ring & gold stippling peripheral to ring; developing hindlimbs & underside base of tail dull, light orange.

Transforming individual 24 mm. in total length with tail 14 mm. Color is like above except yellow ocher triangle on snout →  & dark area on back (see sketch); guanophores

gray brown area

of venter form nearly solid cream layer concealing intestine; iris pigment more intense gold, pupillary ring broken anteriorly & posteriorly; dorsal surface of

Steblein, R.
1950

~~Leptodactylus ocellatus~~ ?

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 hind leg & tarsal pale dull yellow (near yellow ocher).
(JRH 1603).

Stebbins, R.

1950

Leptodactylus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 Nest about 2" in diam. & 3/4" in depth; froth white; tadpoles suspended in it. 27.7°C at 9:48 p.m. at site of nest; air temp. 6" above ground 25.6°C

Soaked soil of banana patch. Nest in clod of mud topped by grass; seemed to open to outside by hole about 1/2" in diam. (only opening). 6" to shallow pool, 12' x 1 1/2' x 1 1/2" deep. Water clear; mud brown. Slender tadpoles in pool look like those in foam nest. Tadpoles would be washed into pool by rain! Tadpoles in foam appeared tan with large pale yellow yolk masses; they wriggled slowly about in mass.

By breaking into other clods, we found several (at least 3) other spherical, smooth-walled cavities, about 2" across & 3/4" deep. These were no doubt made by the leptodactylids.

Stebbins, R.
1950

Nov. 25

46 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

RCS 5135

Color notes Nov. 26, 1950, based on anesthetized individual, under daylight illumination.

21.5 mm: snout - vent
(about 1 3/4 X nat. size)

Stebbins, R.
1950

~~Phyllobates aurotaenia~~

46 km. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 26 RCS 5135, 21.5 mm. snout-vent - Ground color everywhere solid black; olive gray blotching dorsally on body consists of close cluster of light gray guanistic stippling

Rt. eye
ant. →

Black markings are along guanophore or deep brown or black ground color.

; this stippling on upper surface of hind limb has pale blue green to grayish gold cast; blue green cast on forelimbs; yellow marks on limbs (see sketch) seem to be solid beds of guanophore with yellow liquid suffusion; dorsolateral pure white stripe is solid guanistic streak; same for stripe below eye; bluish ventral blotching consists of patches of solid guanistic pigment suffused with varying amounts of pale blue to purplish blue color.

JRH 1609, 25 mm. snout-vent, similar to RCS 5135 but pale yellow suffusion in dorsolateral stripe; upper palpebral margin cream & flecks in upper iris pale copper;

Stebbins, R.
1950

~~Lithobates lineatus~~
~~Phyllobates subnigrum~~

5kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23

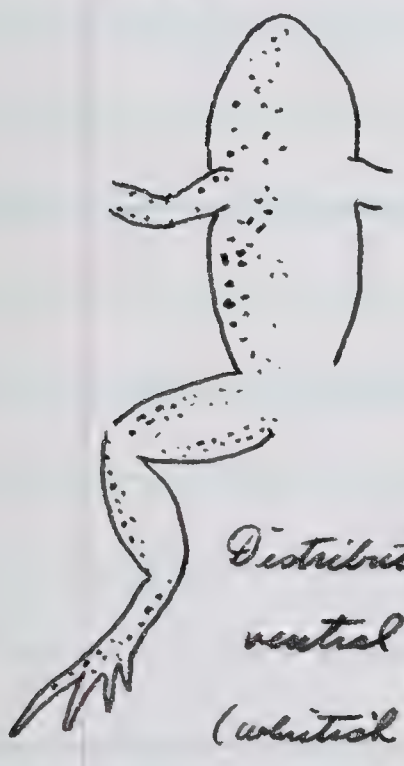
Natural size, from
anesthetized individual, ~~ACS~~ JRH 1602.

Stebbins, R.
1950

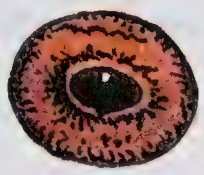
Phyllobates lugubris
Phyllobates vittatus

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 RCS 5118, 35 mm; RCS 5119, 24 mm.; JRH 1601, 33 mm.; JRH 1602, 42 mm. - Dorsolateral stripes yellow to pale yellow, brightest in RCS 5119 & JRH 1602; back between stripes black, RCS 5119 to beige with sooty mottling & black next to dorsolateral stripe; upper surface hind legs brown with scarlet & black markings (see sketch); underside of feet purplish black; ventral surface uniformly gray except for orange red marks (see sketch) & granophores (see below); iris orange copper.



Distribution of ventral granophores (whitish to cream in color)



Rt. eye
ant. →

Stebbins, R.

1950

5 kms. S Villavicencio, Meta, Colombia

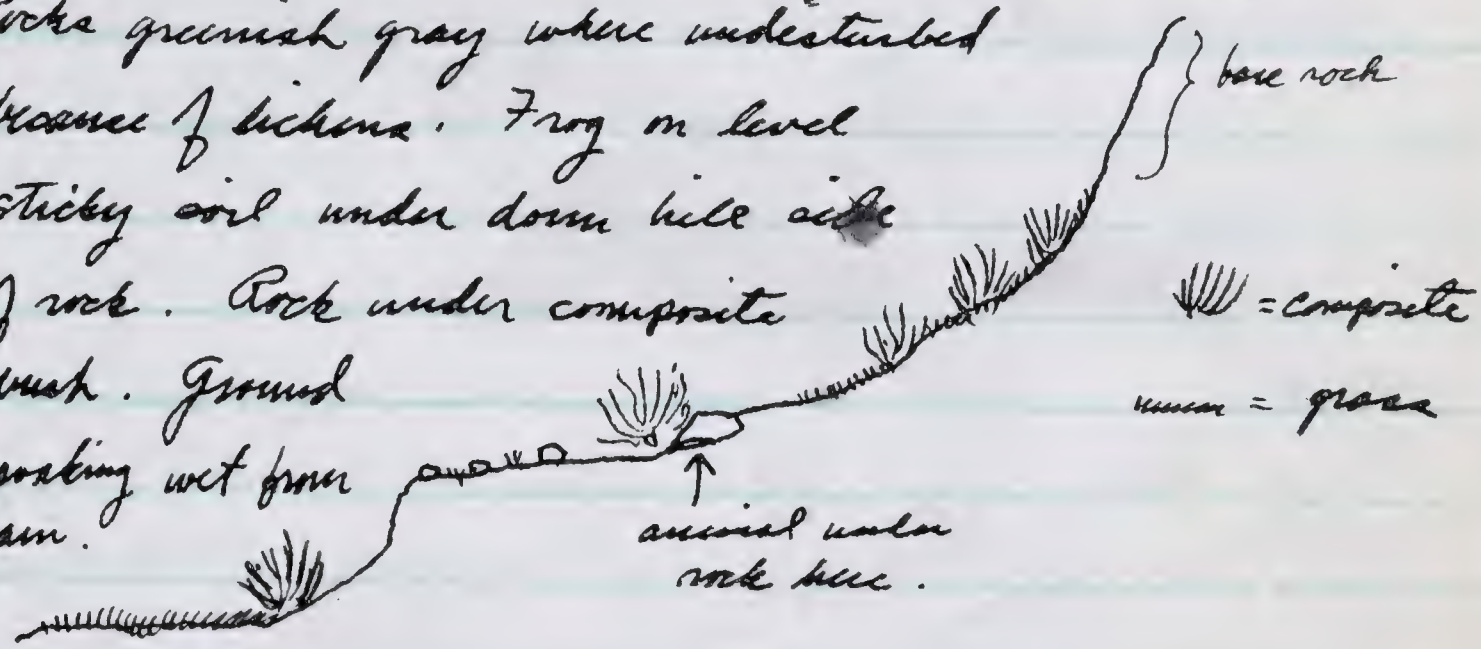
Nov. 23 Rattlewood 24°C; air 4" above ground in shade 27.4°C Forest floor at side of trail. Pool 1½' x 1' x 1" deep, 10 ft away. Frog with yellow & red markings.

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 John Hendrickson turned a sandstone (?) rock 1½' x 8" x 6". Soil rusty brown to buff. Rocks greenish gray where undisturbed because of lichens. Frog on level sticky soil under down hill side of rock. Rock under composite bush. Ground soaking wet from rain.



Soil under rock 14.5°C; air 3" above ground in shade (sky overcast) 12.8°C. Locality is 250-300 ft. above city, below church that is reached by cable car. Slope terraced due to slumping of soil, general angle about 45-50° and slope faces to W. Much green wire (?) grass forming mat 1½ to 5" thick. Frogs seem to call from beneath grass and from beneath rocks. Scattered areas of country rock, upon which rest loose rocks of varying size from 2 x 3' to 1-2"; most are only few inches in diameter; most possess rounded edges. Not many crevices in solid country rock but numerous interstices among loose small rocks. Rocks gray, sooty, or gray green from lichen growth but where freshly broken, they appear buff to rust. Rock seems to be a sandstone. There are scattered

Stebbins, R.
1950

Phyllobates subpunctatus

Bogota, 8700 ft., Cundinamarca, Colombia

Oct. 15 There are scattered ~~Scattered~~ clumps of a rounded purplish-blue blossomed composite, 3 to about 10 ft. apart. ~~around slope~~. We found many frogs beneath rocks under and between these bushes. There was no standing or running water in the immediate vicinity but about 50 to 75 ft. up slope was a pool 10 ft. × 4 ft. × 1 ft. of buff colored muddy water. The pool was in what appeared to be a freshly formed fissure or slump in the sandstone. Here we found recently metamorphosed young, adults; some adults with tads on their backs. Tadpoles, free swimming, were also seen. At the locality down slope where the frogs were first found we obtained about 6-7 egg clusters. Several of these were attended by an adult (see sketches)

(1.)

Lateral aspect

(2)

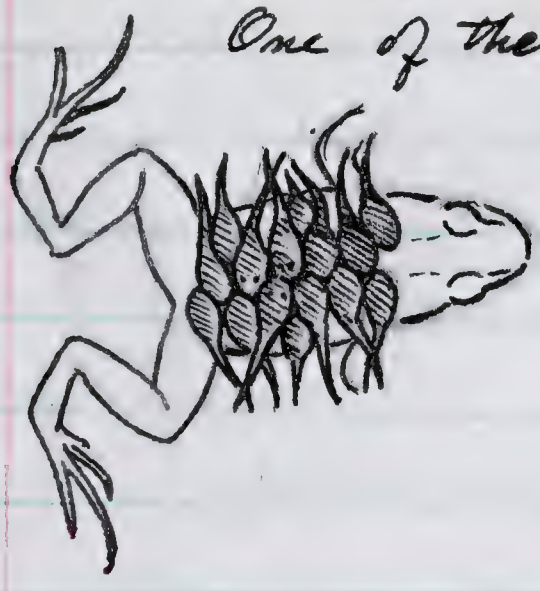
Dorsal aspect

Stebbins, R.
1950

Phyllobates

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15



One of these tadpole carrying individuals had 16 tadpoles on its back. (See sketch). One tad had released its hold when sketch was made. When the tadpole carriers are out of water, the tails of the larvae lie close to the body of the parent and the frog appears to be covered with many closely associated, small, oval slugs. In the water, the tails of the tads are extended and may be wiggled gently (see sketch). The adhesive property of the tads is considerable, as 3 or 4 tadpole carrying frogs were confined with about 50 unburdened animals in a 8 x 10" cloth bag, yet the tads remained in place. Even when adult with tads was placed in formalin, the tads remained on (for most part) until they were dead, whereupon they tended to drop away. Several of the tadpole carriers were caught in the pool mentioned earlier; one was found hopping across bare, rocky ground above the area where we had been intensively turning stones. It may have been frightened from among the rocks. John found one with only 5 (or so) tads on its back, among the rocks where we obtained about 30+ individuals. This large number was obtained in an area 12'+ x 20'.

Stebbins, R.
1950

Phyllobates

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 In this sector we turned nearly every rock. The 6 ± egg clusters were also gotten in this area. The remaining frogs which brought our grand total to 62, were found in a around the small pool, up slope. We collected this species from 3:00 to about 4:15 p.m.

Eggs were found in rounded, flattened piles beneath small stones. The rested on soil with considerable humus and small rootlets; soil that suggested, in water content, that preferred by Plethodon vehiculum or Eurycea. This soil pressed to a cast but in some instances the cast broke on tapping. Surround exposed soil & much of the soil among the rocks was wetter - sticky. The soil where the frogs were most abundant was sooty or blackish in color, indicating greater organic content than the buff or rust color rock in less heavily vegetated areas. In three instances adults were found in attendance of the eggs. One adult upon being exposed hoped 2 or 3" up slope and under a rock to its egg mass. The animal hopped over the egg cluster (see sketch).

The voice of this frog is a cricket-like chirping. When first heard I felt quite certain I was hearing crickets. The end of the note is about 2 octaves above violin A. This is the

Stiebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Oct. 15 pitch heard at a distance. The first part of the note is lower but I could seldom detect it and it may not always be given. An individual timed gave a single note about every 2 seconds. The notes were about 1/5 to 2/5 seconds in duration. Occasionally the notes seemed to be 2-parted. The voice sounds like "put", "p-put", "tat", or "but." Sometimes the interval between notes is 2½ to 3 seconds. The pitch seems to vary about 2 notes but "A" seems to be about the highest. The sound is quite clear and might be diagramed as

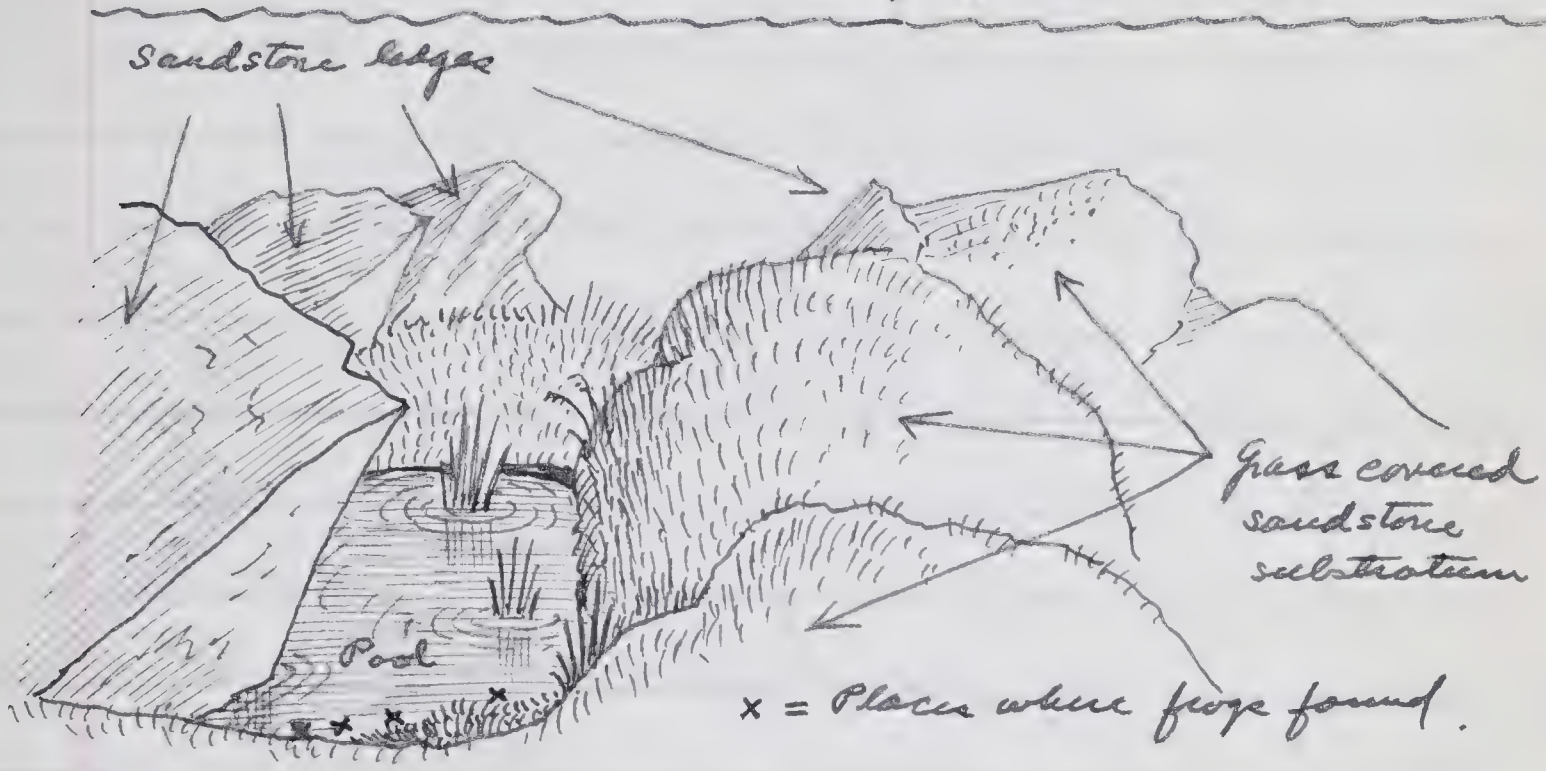
See John Hendrickson's notes for a list of associated animals.

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 Revisited place where frogs obtained



Pool in cleft in sandstone where tadpole-carrying frogs were found.

Oct. 15, 1950. The water level in the pool seemed higher, perhaps 4-6" higher and there seemed to be more tadpole carriers. We readily found 4 at pool margin, as indicated in the sketch.

Reevaluated voice of ~~low~~ calling individual. This animal called 6 or 7 notes above A, and octave above "violin A."

Temp. at collection site of one individual was 13.8°C, at depth of 6" beneath loose rock more or less mingled with mat-like wire grass; a low growing broad leafed herb was also present. Vegetation grew to height of about 2-4". The water of the above pool

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 at 4:30 p.m. was 12.8°C. It hailed and rained for about 15 minutes during our visit to the area. It appears that this frog may breed rather continuously through the rainy season.

Rain seemed to stimulate the frogs to call. When we first began our ascent of the hill to the pool, it was not raining and we heard only scattered and rather infrequent peeps; after the rain, many were heard but we were in a different place, which may explain the increase.

We collected about 10 or 12 frogs under rocks in grassy places (seldom under isolated boulders) and in the pool. When we left the area, after sundown, many were calling.

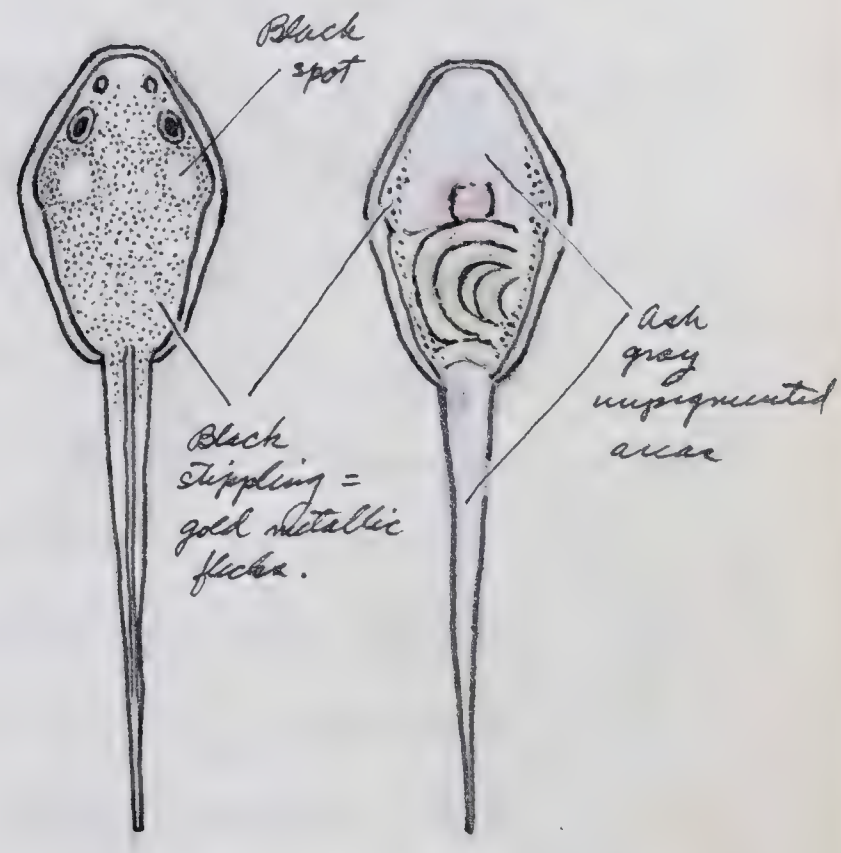
Nov. 15 Made drawings of tadpole carrying adults and tadpole. Tadpoles 9 mm. in total length, head-body 3 mm. had much yolk in intestine; yolk orange yellow; tadpoles 11.5 mm. in total length, head-body 4 mm. had much less yolk in intestine; intestine was less filled out and yolk was pale yellow or cream. So far as I can determine a given frog carries tads all of the same size. Size difference & yolk difference suggest that tads may be carried for some time.

Stebbins, 1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14. Drawings from living anesthetized animals
Nov. 15.

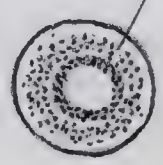


Tadpole with reduced tail was dead. Considerable necrosis was evident. Tail had rotted off, yet animal remained attached.

Dots on tadpoles are paired black spots, not eyes.

Black spot (free of metallic gold flecks)

Black stippling indicates distribution of gold to greenish gold metallic stippling



Iris

Tadpole

11.5 mm. total length; head-body 4 mm.

Mus. Vert. Zool.
Univ. Calif., Berkeley.

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8800 ft., Cundinamarca, Colombia

Nov. 14 The tadpoles appear to be attached to the parent by a sticky mucous. Tadpoles were lifted with a needle and the mucous was pulled out in strings. When the ventral surface of the tadpole is scraped with a needle & then the needle lifted, a string or thread of mucous 1" long may be spun out. The ventral surface of the tadpole is flat or almost concaved which provides maximum contact. I believe the mucous may be secreted by the tadpole but it is also possible that it is produced by the adult. The skin of the adult, where tads were attached, did not possess mucous like the under side of the tadpole.

Description of Tadpole

The tadpole appears dark olive gray to almost black as viewed from above, without the aid of a lens; below gray with yellow yolk filled intestine showing clearly. Under magnification numerous metallic gold flecks are seen scattered closely over the dorsal and lateral surfaces of the head-body; in bright sunlight these flecks may have greenish cast; the ground color is black (melanic); a few metallic flecks occur at the upper base of the tail musculature and at the anterior portion of the dorsal fin;

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 the tail fins are translucent, the upper one with dark melanic flecks and with dull greenish yellow or yellowish olive suffusion, especially anteriorly and along its junction with the tail musculature; upper surface tail musculature with similar yellowish color; ventral surface of head-body battleship gray or lighter; heart pink; intestine yellow; underside of tail battleship gray; few metallic gold flecks seem to encroach laterally when ventral surface of head-body view directly; iris black largely obscured by close stippling of gold; gold pupillary ring. Foregoing description based on tadpole 11.5 mm. in total length, removed from back of frog. Color notes Nov. 15, 1950

Description of Adult

♂ Ad., 21 mm. snout-vent — Ground color above beige; dark markings, black; vertebral stripe (with irregular margins) cream to pale yellow; dorsolateral stripe pale yellow to over arm insertion, becoming slightly more yellow along sides, and orange or yellow orange just anterior to groin (a distance of 2+ mm.); dark stripe on face black to deep brown; stripe ~~between~~ from eye to immediately in front of groin black, suffused with white

Stebbins, R.

1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 to ash gray guanophores (?); guanophores stop short of upper edge of stripe and lower edge in postorbital portion; iris with silvery ~~upper~~ margin above pupil; duller, nearly pale copper margin (broken) below; numerous beige to dull copper flecks above & below pupil; all light areas of dorsal, ventral, & lateral surfaces appear to be close network of guanophores (?); ground color ventrally pale yellow to cream marked with dark gray or sooty; yellow orange (lipoid?) suffusion in axilla, groin, and on inner surface of tibial region.

Pt. eye
ant. →

← (♂) Another adult, 22 mm. snout-vent — Similar to preceding but broader, duller dorsal stripe; dark dorsal markings dark brown & fewer, especially on hind limbs; tympanum purplish brown; more yellow orange color ventrally, suffusing entire ventral surface of femora & lower belly

(♂) Another adult, 23 mm. snout-vent, — Similar to first but fewer & duller dark markings; no vertebral stripe; pale yellow color in groin, axilla, & inner side of tibia; creamy gold upper iris margin (above pupil).

The 3 foregoing adults were carrying tadpoles.

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 The tenacity of the tadpole is shown by the following: Four tadpole carrying frogs were confined with 3 adults without tads. All were placed in a jar 2" wide and 5" high. The animals were confined about 4:00 p.m., Nov. 14. A thin film of water was present in the bottom of the jar. The next morning, about 9:00 a.m., only one tadpole had released and was swimming in the shallow water at the bottom of the jar.

It appears that the tadpoles remain with the adult for a considerable time. This is suggested by the following: (1.) The large number of tadpole carrying frogs found swimming about in the pools harboring free swimming tads. If the tads released their hold upon the adults reaching water, ~~this~~ one would not expect to find ~~some~~ so many burdened adults. (2) Size difference in carried tads. The tads of any given frog are of similar size. The larvae evidently grow while on the back of the parent. This is supported by the 3rd point - (3) Changes in intestinal yolk content of carried tads. Small tads have more yolk than large ones.

Tenacity of the tadpole would seem to have survival value if it is correlated with an urge on the part of the adult to reach water in considerable quantity before settling down to an

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Nov. 14 a period of aquatic life resulting in release from its tadpole burden.

Dec. 5 Visited the pond where this species was obtained earlier. Tadpole carrying frogs were again present. Six were collected at the margin of the pool. John got water & air temperatures (see his notes). Many large tadpoles were seen coming to the surface. A number were dip-netted from the pool. The tadpole carriers were put in a pasteboard box 4" x 3" x 7" with a little damp moss. They were so transported by air to Berkeley were they were removed to an aquarium 1' x 1½' x 1'. Damp moss and paper towels provided moisture. Today, Dec. 14, 1950, the tads were still in place and alive. I preserved numbers RCS 5159, 5162, & 5163 in Bouin's for study of the skin and larvae. The tadpoles remained in place during and following preservation.

Dec. 19 Checked one of 4 remaining tadpole carriers. Tads still alive! All ~~three~~ 4 animals still carry their larvae.

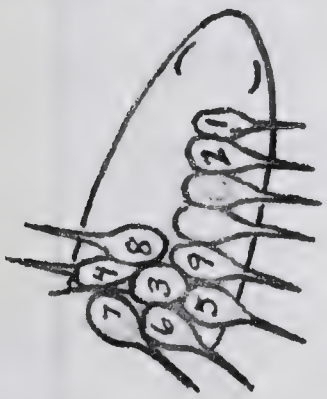
Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 21 Placed a tadpole carrier that has been kept in the bone room (about 12-13°C) in an aquarium with a small amount of damp moss & two wet paper towels, into a dish of tap water. Body of water was 6" x 1" deep, 18.5°C. I wished to check rate and manner of release of tadpoles. The experimental dish was placed by the window in my office and received the diffused illumination of an overcast day. The frog with its tads was watched with a dissecting microscope. A summary of observations follows:

8:55 a.m. - Individual with 11 tadpoles (attached as diagrammed) placed in water.



Tads were released (in order shown by numbers) at following times:
9:06 (1); 9:07 (2); 9:13 (3); 9:30 (4);
9:47 (5); 9:44 (6); 9:51 (7); 9:15 (8 & 9);

There is considerable tail wriggling before tad is released and periodic jaw movements. One tad will struggle to free itself, then rest. Another will wriggle a bit and rest so that there is almost continual movement involving one tadpole or another. When a tad breaks away a thin plate of whitish mucous is left behind. I wonder how

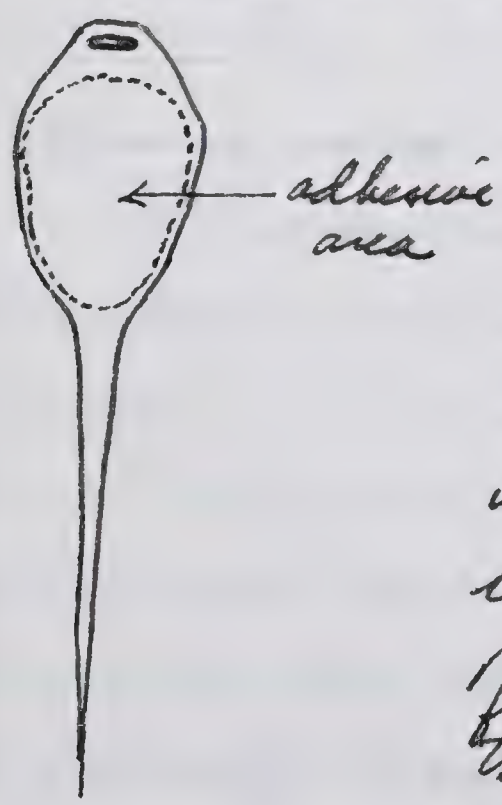
Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 21 important softening of this mucous by the water is in releasing the tadpoles. It is possible that release is achieved largely through the muscular activity of the larva, stimulated by immersion in water and fostered by locomotory movements of the adult.

The mucous seems to be concentrated in the dorsolateral ~~fold~~ regions (no folds present) and over the entire lower back. This may help to explain the transverse alligment of the larvae. In 7 tadpoles examined from the back of another frog, 6 had no mucous in the mouth area. The adhesive area was about as shown in sketch. A 7th animal seemed to have the mouth covered but this observation is uncertain.



Many of the tadpoles showed almost imperceptable movements of the head musculature involving a slight raising and lowering of the anterior part of the head-body. I presume these movements were respiratory and were stimulated by immersion in water. The head movements related to release were much more violent and seemed to

Stebbins, R.
1950

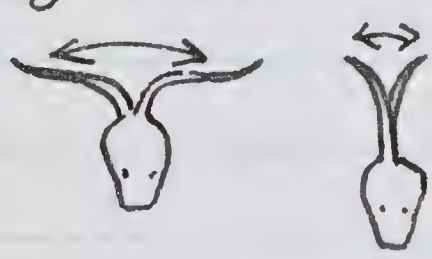
Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 21 include a kind of spitting action of the mouth, of the sort I have seen when a tadpole regurgitates.

The tads vary the violence of their movements in their attempts to release themselves. The sketches will suggest their variability.

note the amount of shifting of the body in a tad about ready to leave the parent.



Varying amplitudes of tail movements. The wide arch in tail movement seems to be performed most often shortly before release

Short, snappy respiratory movements of the adult may further stimulate the tadpoles to move.

At 9:33 a.m. the frog jumped out of the dish and was roughly handled in catching it but no tads were lost. The adult has continually tried to climb out of the jar.

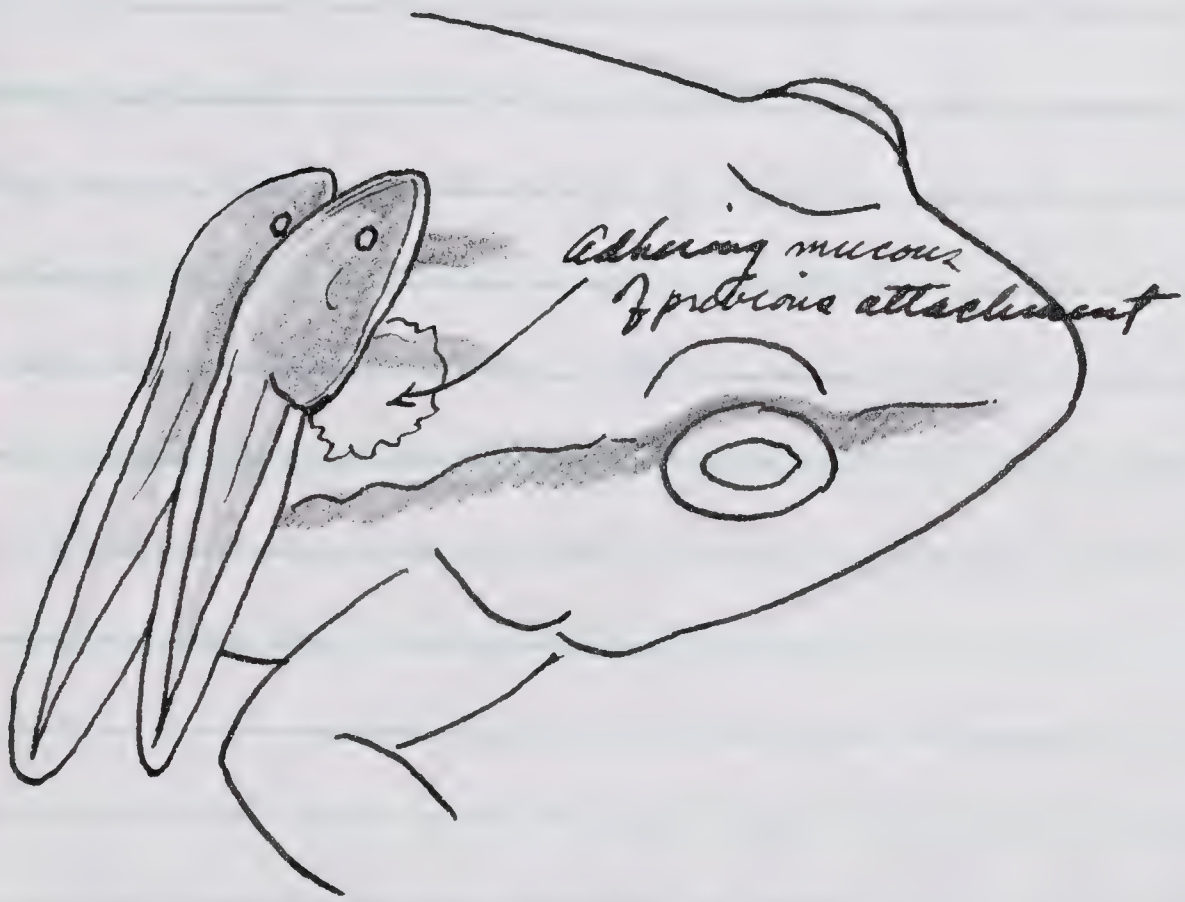
At 9:44 a.m. tadpole 6 was held only by a slender strand of mucous but the larva lay still for several seconds, then wriggled its tail and sped away.

Stebbins, R.
1950

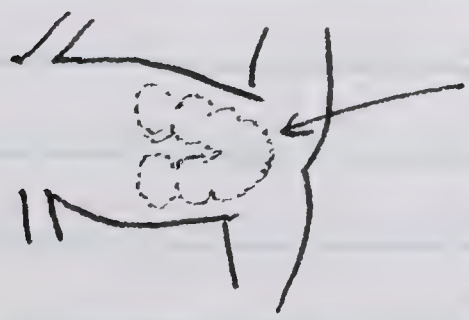
Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 21 9:51 a.m., Tad 7 was released following repeated probing of the frog to keep it from climbing over the rim of the petri dish. The larva came off during a rapid swimming action of the adult. Tad 5 was also lost during a swimming movement of the adult.



Two tadpoles in place on back of adult



A few minutes later this adult was handled and strings of soft translucent mucous(?) came off in my fingers & above whitish secretion was no longer evident.
No yolk visible in these tads.

Stebbins, R.
1950

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia

Dec. 21 Foregoing observations based on tadpole carrying frogs obtained Dec. 5, 1950 at Bogotá & kept in damp moss & on wet paper towels since that date.

All tadpoles off back of experimental animal by 12:40 p.m.

Dec. 22 All but thin film of water in bottom of dish was poured off above tadpoles. I hoped that by simulating drying of their "pond" they would return to the back of the adult. The tadpoles with the adult were left overnight but this morning they were as observed last night — 7 tads beneath or next to the adult but none on his back.

Feb. 21, 1951 Quote from a letter from Dr. Stirton to Alden Miller, dated Feb. 8, 1951.

"Jan. 18, I visited the pools near the Funicular where Dr. Robert C. Stebbins had collected the little frogs that carry their tiny tadpoles on their backs. These are known as *Phyllobates subpunctatus*. We captured several adults, one was carrying the tiny tadpoles on its back. There were some tadpoles in the water (approx. 15 mm. long)."

Stebbins, R.
(after
Hendrickson, J.)
1950

Phyllobates subpunctatus

Dec. 29 (Notes on captive animals in Berkeley)
Several adults, including some bearing tadpoles on their backs, were brought home from Colombia successfully, and have been kept in an aquarium in the M.V.Z. bone room at about 12° C. Eventually all but two tadpole carriers were killed; on Dec. 28 both these were still carrying their tadpoles; one was killed then--3 tads dropped off, 3 stuck in Bouins. On Dec. 29 (today) the tadpoles on the remaining "carrier" had all left the frog except for two tads hanging on the extreme post. end of the adults body. The tads which had "fallen off" were on the bottom of the aquarium in a thin film of water there. They were quite active. There was little or no yolk visible in the guts of the tadpoles. Water then added to depth of ½".
Color notes on one of the tads: (to 12/29/50) Animal invested in milky-clear envelope overlying opaque, dark-pigmented tissue of body proper (this envelope not evident on tail). Region of outer envelope ant. to and between eyes with an irregular, loose net of melanophores. Loose scattering of small green-gold guanophores in envelope, mostly post. to eyes, and mainly in dorsal areas. All guanophores seen dorsally are of the same, slightly-greenish, gold color. The stipple of guanophores is most dense along the spinal region, with other less-dense stippling in diffuse fashion laterally. Two "parotoid-like" bulges, one behind each eye, are relatively free from guanophores.

ebbins, R.
after
ndrickson, J.)
1950

Dec. 29

Phyllobates subpunctatus

(Notes on captive animals in Berkeley)

The eyes have a pupillary ring of close-set (single row) golden (greenish) cells, with a few scattered over the black iris surface. Laterally, the guanophores are seen to be limited to the areas of darkest melanic pigmentation. On the "cephalothoracic ½" of the body the lower limit of the guanophores is roughly along a line from mouth corner to center (d.-v.) of tail base. On the "abdominal" ½ of the body, they extend farther onto the ventral surface, the non-guanistic area over the intestine (v. view) being about twice the lateral thickness of the tail base in width. A few scattered guanophores can be seen on the tail and tail membrane.

Stebbins, R.
1951

Phyllobates subpunctatus

Bogotá, 8701 ft., Cundinamarca, Colombia

April 18 One of the tadpoles, kept in an aquarium in my living room, is metamorphosing. Both hind legs are well developed; one of the forelegs (the left one) is free of the operculum. The other one is still concealed but the operculum is distended on that side.

April 20 Both forelegs are now free of the operculum. Red color in the operculum area indicates extensive gill vascularization. The tail has not reduced noticeably in length but the fins have been reduced anteriorly.

There are still remnants of the "moss" brought from Bogotá and I have been giving the tads algae from the Life Science Bldg. court pool. Small *Bufo microscaphus californicus* tadpoles are being eaten by the *Phyllobates* tads. In a period of about 1 month, some 50-75+ tadpoles have been reduced to 2 or 3. Three of the adult frogs have been preserved. They had become very thin. The one remaining was kept because it was the least emaciated. It may be eating the *Bufo* tadpoles. In the last week, the frog seems to have gained weight.

Stebbins, R.
1951

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia, S.A.

April 21 Two more tadpoles now have four legs, making a total of 3. The animals rest on the floating and submerged water weeds with just their snouts exposed. Their tails are about 3/4" long. One animal measured had the head-body 11 mm. long, the tail 19 mm. All the small *Bufo* tads have been eaten.

April 22 This morning at 7:30 a.m. we found 2 of the four legged tadpoles out on one of the floating blocks. The tails are still long. Most of the other tadpoles at this time had hind limbs only about 2 mm. long. The tadpoles themselves are about 30 mm. in total length.

April 23 One of small metamorphosing frogs measured 31/32" in total length and 17/32" tail length. The two little fellows with forelimbs expired spend much time out of water on a board. (8:00 a.m.).

One of the 4 legged metamorphosing individuals was found dead tonight. It evidently had drowned.

April 24 A 4th individual is now 4 legged. Another 4 legged animal was found dead. Six tadpoles remain to transform.

April 25 Another 4-legged individual found dead (spoiled).

April 27 " " " " " .

Stebbins, R.
1951

Phyllobates subpunctatus

Bogotá, 8700 ft., Cundinamarca, Colombia, S.A.

May 8 Another tadpole has four legs.

May 10 " " " " "

May 12 These two transforming individuals were out on one of the floating blocks this morning.

May 17 Another tadpole has 4 legs.

May 19 Tail almost resorbed.

May 20 Little fellow has absorbed his tail and sits out on block. All other transforming individuals drowned. This one seems to have "sense" enough to stay out of water.

May 26 Above animal still alive. Last tadpole has metamorphosed. Animal still has about half its tail.

June 1? Still another tadpole untransformed. I had overlooked him earlier. Two little fellows with tails fully resorbed are getting along O.K. in aquarium.

July 2 About 2 weeks ago the last adult (brought from Bogotá) died. *Hyla vegilla* tadpoles have, by now, nearly completely consumed him. They seem to be eating not only the flesh, but the skeleton as well.

Stebbins, R.
1950

Rana [illegible]

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 Cloaca 21.6°C; 9:55 p.m.; air 21.6°C; water 23.3°C. Animal sitting on dry stones whose bases are in quiet water at edge of creek 10-12 ft. wide, 4-6" deep. Frog sat still even when net clapped over it. Animal about 5" long. When held through net, it did not struggle but cried out when I took it by one of its hind legs and dropped it into a sack.

This stream is the one that flows through part of the town and leaves the main portion of the town to the S. In places the water moves rapidly and shallowly over the water worn cobble of the stream bottom but there are many relatively quiet pools with silt bottoms. The odor of the stream suggests sewage, even at this distance (several 100 yds. ≠ E of the road). In places the banks are abrupt, rising 2 to 6 ft. but there are also stretches where they ~~are~~ slope gently. Cultivated fields and nearly natural grassy tracks with patches of dense waist to head high growth, border the stream. There are a few trees and tree clumps. The country side is flat; the area lies about ½ miles from the Western hills.

I caught 2 frogs; John also got several; we saw about ½ dozen more. Their eyeshine was whitish with faint orange yellow cast.

Stebbins, R.

1950

Rana palmipes

Villavicencio, 1600 ft., Meta, Colombia

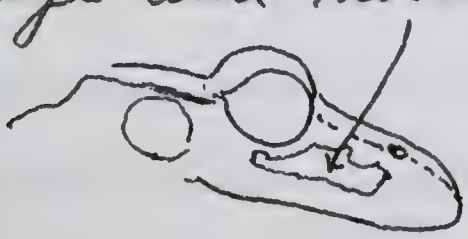
Nov. 19 The animals seemed not especially wary. They allowed close approach.

At one time, an animal in my field sack chuckled like *Rana pipiens*. Otherwise, the animals were silent. They were spaced 8 to 30-40 ft. apart along the stream (principally its bodies). I did not see one swimming or hopping about.

It was a nearly clear, moonlit evening with an occasional light breeze.

RCS 5061 - 95 mm. snout-vent — Dorsal surface of head and back to level of groin deep green between dorsolateral folds; green area increasingly broken by brown blotches from over forelimb insertion posteriorly; sides rich brown, including dorsolateral folds; folds lighten slightly over ear but are otherwise like sides; ear brown, slightly darker than sides; black line over and behind ear; side of face from line behind ear, anteriorly light brown to beige except for green area between eye and nostril; upper surface of limbs brown, dark markings black; whitish to pale powder blue variegations posterior-dorsal

Color of green of dorsum.



Stebbins, R.
1950

Rana palmipes

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 part of femoral region (distal half of this area); under side of feet sooty brown; ventral ground color uniformly white but spotted & flecked with sooty to dark gray; brownish gray flecking in gular area; web sooty; iris

Rt. eye
ant. →

beige patch in upper iris (with pink highlights).

light areas in transverse zone across eye, through pupil (in area bracketed) - reddish rust.

light marks in lower iris pinkish.

Color notes Nov. 20 from anesthetized animal, by artificial light.

Photographed RCS 5062, in color, Nov. 22, 1950
Animal had been dead some hours.

Nov. 22 JRH 1594-98 - 3¾, 3½, 2⅝, 3½, & 4⅝" snout-vent - All have green color from snout to near vent but in all this green is clouded & spotted with brown posteriorly; green is clearest on head, including upper eyelids; the smallest & largest animal have some spotting on eyelids & head; sides between limbs olive gray, olive, to brown with black spots; dorsolateral folds brown or partly suffused with green; legs brown above with sooty markings; upper, posterior face of femur variegated beige to light gray with black; light gray to whitish

Stebbins, R.
1950

Rana palmipes

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 scrawling distally on femoral segment; inner 3 toes on fore & hind feet (dorsal surface) whitish to pale yellow or cream; hind toes tend to be more whitish than fore toes; below white to cream with dark gray to light gray spotting; gular area of JRH 1594 suffused with gray brown, JRH 1595-97 with immaculate throats, & remainder lightly flecked or spotted with dusky; web blackish; underside of feet sooty; lower sides, posteriorly with faint yellowish suffusion; tympanum brown; side of face from anterior edge tympanum to tip of snout, yellow green in JRH 1594-95 & 1597, beige & gray in other 2 animals; iris of all 5 individuals essentially indistinguishable from that described for RCS 5061, Nov. 19, 1950.

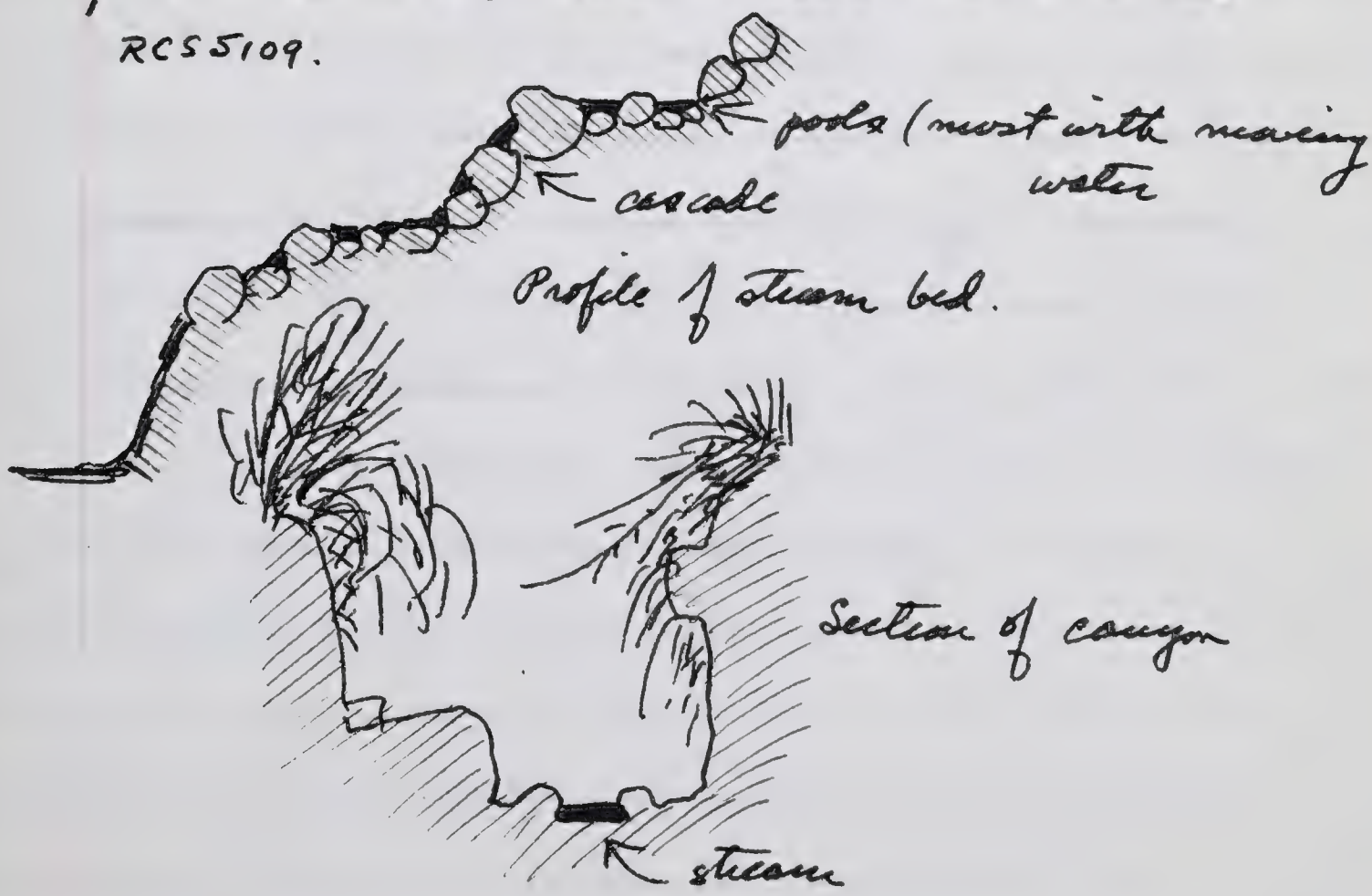
Foregoing color notes of anesthetized animals in daylight.

Stebbins, R.
1950

$\frac{1}{2}$ mi. E Buenavista, 3100 ft., Meta, Colombia

Nov. 21 Small frog, about ~~1/2~~ 3/4" snout-vent under rock 8" x 1½' x 12"; substratum wet, silty mud 20.3°C; air 6" above site, in shade 22.7°C; 8:53 a.m. 1½ ft. from running water of small, mountain brook. Stream 1 to 3 ft. wide, many pools along rocky bed. Rocks mostly large, 1 - 5 ft. in diam; ravine steep sided, 45 to 90°, about 20 ft. wide at top, here. Tangle of vines on either side; ravine faces SE, is briefly illuminated now. Site where frog found would be illuminated about 4 hrs. Moss covers some of rocks. Collection site under small wooden bridge, about 100 ft. above level of main canyon stream which flows E toward Villavicencio. Water of stream 19.7°C. Daddy long legs, ants, fresh-water crab, camel cricket under stones.

RCS 5109.

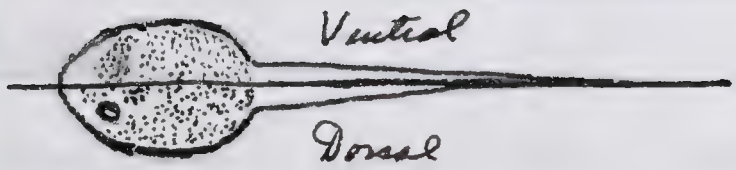


Stebbins, R.
1950

Buenavista, 4000 ft., Meta, Colombia

Nov. 21

RCS 5113



Iris

(Dark markings are guanophores(?))

Light brown above on body and tail, marked with sooty brown spots; tail and head, from eye region anteriorly (ground color) beige; iris with pale gold pupillary ring & pale gold stippling; no guanophores detected on tail or tail fins; intestine clearly visible; ventral stippling of pale gold metallic cells; similar stippling on sides & dorsum but flecks more closely set, forming nearly continuous patches; intestine light brown; purplish red area (transverse) immediately anterior to intestine & in vent region; under magnification ground color of upper surface of snout & tail musculature, appears pale yellow; tail fins similar but lighter, especially lower one.

These tadpoles were found at the E end of the small reservoir described under Leptodactylus bocourti.

Stebbins, R.
1950

Tadpoles

Villavieja, 1400 ft., Huila, Colombia

Nov. 8 Water 27°C; 2:50 p.m.; air 6" above ground in shade 24.5°C

Pool 25' X 70' X 6" deep. Many dead banana fronds in water; green pond weed floating near center of pond covering an area 8 X 4 ft. Water beetles, crickets & anuran ~~tad~~ larvae in a about pool. Many tads to about 1/4" body length. Some were light olive gray, others dark brown. They came to the surface occasionally in a quick darting movement, remaining only an instant at the surface.

The foregoing pool was in a banana patch on an island in the Magdalena River, near Villavieja.

Reptiles

Stebbins, R.
1950

Ameiva

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 22 Shot an Ameiva about 14" in total length (tail regen.). Animal on E-facing bank in morning sun; time about 9:30 a.m. Ran to shelter of bushes where it was shot. Cloaca 33°c; air 1" above ground in shade, 28°c; surface of soil in sun (soil damp), 33°c. Lizard seemed somewhat sluggish. It allowed me to come within 6 ft. of it. Animal appeared to be in dark phase.

Oct. 28 Paulino shot a hawk that had the tail of one of these lizards in its stomach. Apparently the lizard had escaped, as no other remains could be found. The hawk is a buteo-like form about 17" long; dark gray above; tail barred black and white; primaries rust colored, with black bars; breast barred brown & whitish; iris, cere, and feet yellow.

Nov. 1 Shot an adult about 1 ft. snout-vent. Cloacal temp. 38.6°c; air temp. 1" above ground in shade 26.2°c; muddy soil in sun, 38.5°c; time 11:15 a.m. Animal active but apparently had been in sun just before I arrived. Specimen obtained 50 yds. W of railroad bridge over quebrada Lajas. Cnemidophorus was also present. Trees bordered stream; tall grass & brushy tangles with small open areas.

Stebbins, R.

1950

Ameiva

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 2 4" snout-vent; body temp. 40.4°C; damp soil 32.7°C; air 34.3°C; 2:15 p.m.; sky overcast. Lizard opposite farm house 150 yds. SW of quebrada Cerbatana on E side railroad track. Burrow about same size around as lizard present 3" away. (RCS 4961).

Stebbins, R.

1950

Ameiva

Cabatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

2 3/8" snout-vent. (RCS 4988).

	Time	Cloacal temp.	
Nov. 3	11:56 a.m.	36.3°C	
	11:58	40.0°C	
	12:00 noon	41.8	
	12:02 p.m.	44.3	- actively scrambling about
	12:06	45.4	- mouth open; panting
	12:09	46.1	- impairment of movement of hind limbs
*	12:11	46.4	- hind legs paralyzed
	12:13	"	" " "
	12:15	45.6	- spasmodic chest & gular movements.
	12:21	45.8	- chest movements stopped; occasional spasmodic gular movements.

Air 34.6°C at 12:18 p.m.

Substratum 45.5°C at 12:19 p.m.

Dead few moments later.

* = critical maximum.

Foregoing specimen noosed by J. Hendrickson Pantano, near camp.

Ad ♂ 5 5/8" snout-vent. (JRH 1498)

36.7°C - air 1/2" above ground in shade

Soil 50°C+

Nov. 4	1:13 p.m.	32.8°C	
	1:19 p.m	40.5°C	
	1:21 p.m.	[illegible].5°C	
	1:22 p.m.	43.2°C	- Panting; mouth open
	1:24	44.5°C	- Rapid respiration; mouth open
	1:26	45.5°C	- Paralysis of hind limbs partial.
*	1:32	47.2°C	- Paralysis of hind limbs complete
	1:37	48.7°C	- Dead.

Stebbins, R.
1950

Ameiva

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 5

Time	Cloacal temp.	Specimen $3\frac{3}{8}$" in snout-vent length.
10:52	33°C	
10:55	40°C	Very active; backing up quickly & darting forward.
10:57	43.9°C	Mouth slightly agape; animal obviously uncomfortable.
10:59	45.3°C	Breathing fast & rather labored; mouth well open; no loss of coordination.
* 11:01	46.3	Partial paralysis of hind limbs
11:02	46.0	Hind limbs paralized.
11:04	46.7	Shallow chest & gular movements — spasmodic
11:06	47.6	Last way of head; no gular or chest movements. Dead.

Air temp. $\frac{1}{2}$" above ground in shade - 34°C
Substratum - 50°+C.
* Critical maximum (Nov. 4),
Specimen obtained yesterday by noosing, by J. Hendrickson,

Area between uppermost dorsolateral light stripes brown, becoming olivaceous on neck and olive green on head plates, and light gray on tail; in this area dark spots, bars, etc. are black; uppermost (dorsolateral) light stripe yellow with greenish cast on neck & above forelimb, grading through cream to beige posteriorly, becoming almost white on tail; this stripe margined by black above & broad black band below; latter band with light spots of cream grading to light rust on neck; lateral light stripe yellow

Stebbins, R.
1950

Ameiva ameiva

Cerbatana, 5 kms. N Villarrica, 1400 ft., Huila, Colombia

Nov. 5 anteriorly grading through cream to white posteriorly; white on side of tail; stripe marginal by black below and ~~gray~~ this black grading ventrally to brown & broken by large white spots; tongue light purplish brown tipped with dark gray; iris copper; pupil shape as sketched; most spots in

→ ant.

black postocular patch of broad lateral black stripe; below white to cream, without markings; dorsal surface of limbs light gray tan with black markings (faint & indistinct except toward limb bases). Color notes from recently heat killed animal; specimen captured yesterday, Nov. 4.

Stebbins, R.
1950

Nov. 23

5 kms. S Williamsburg, 1600 ft.
Columbia

Amphibia

No.	Size	Sex	Time	Cloaca	Air	Substratum	Activity
(1)	5 7/16"	♂	8:50 a.m.	35.7°C	31.2°C	26.9°C - Sticks in shade.	Crawling through heavy leafy ground cover
(2)	4 11/16"	♀	9:07 "	37.2°C	27°C (shade of bushes)	25.5°C - damp compost in dappled light & shade	"
(3)	5 3/8"	♂	9:15 "	39.3°C	27.7° "	33.8°C (sunny soil at base of 6" high herb growth).	" (Chased 30 ft.)
(4)	4 1/4"	♀	10:15 "	39.°C	29°C in shade in dense forest	28.3°C - Damp soil on forest floor in shade.	Crawling along forest floor in light & shade.
(5)	5"	♀	10:25 "	38.5°C	26.5, 4" above forest floor in shade	24.3°C - Damp soil in shade of forest floor.	Among herbaceous growth in sunny patch in pine
(6)	5 1/4"	♀	10:40 "	39.3°C	32.3°C - Among grass in sunny patch (shaded with body)	29.5°C Among grass	Edge intuction - forest to E, grass & trail to SW. Tried at edge of herbs next to sunny patch.
(7)	2"	juv.	10:60 "	37.7°C	28°C, shade of vine	26°C damp, firmly packed soil	Light & shade of vine along trail through woods. Running about. Sky overcast for 10 min.
(8)	4 1/2"	♂	1:50 p.m.	38.6°C	31.6°C (sun but shaded by my body)	32.3°C - Damp sand in sun (shaded by me)	In light & shade of bush at trail side. Chased 15 ft. to S
(9)	5 3/16"	♂	3:30 p.m.	36.3°C	29.0°C in shade, 3" above ground	33.8°C - Soil, recently in sun. Dry, sandy.	Chased 30 ft. through bushes.
(10)	4 1/4"	♀	4:00 p.m.	35.1°C	29.3°C - shaded by my body	30°C soil at base of grass mat	In bushes at edge of meadow.

37 6.7

Stebbins, R.
1950

Ameiva

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 ♀ JRH 1565 – $4\frac{13}{16}$" snout-vent – Dorsal surface head, neck, sacral area and tail brown – tending toward olive brown on head and neck and rusty brown on tail and sacral area; dorsal surfaces hind limbs brown with black markings; forelimbs light olive brown with black markings; back and upper sides suffused with green; spots on sides pale yellow or greenish yellow; sooty, dorsolateral, rather vague, stripe; sides of neck rust brown; below whitish with light gray suffusion but underside of tail with light beige suffusion; ventrolateral light blue areas & anterior surface femur light blue; iris beige. Notes by artificial light, $8\frac{1}{2}$ hrs. after death.

Stebbins, R.
1950

Anadia bogotensis

Bogotá, 8800 ft., Cundinamarca, Colombia

Nov. 14 What appeared to be an adult individual was captured under a stone 10"x10"x 6" that lay on a 15-20° W-facing slope. There was no leaf canopy. The collection site was on a generally W-facing slope of angle given, in an area about 200 ft. across which was largely without trees. In surrounding areas were eucalyptus trees, some large, others only 3-6 ft. high. There were many patches of ferns that look like brake fern, in varying stages of whithering but many patches green. At least parts of the area had been burned as evidenced by charred fern stalks and other plant materials and darkened rocks. The slope lay below an abrupt yellow sand stone cliff about 30 ft. high that ~~ed~~ probably acts as a reflector of heat toward the slope below and which contributes loose rock that serves as cover. On a clear day, the area would be illuminated nearly all day but the sun no doubt would reach the area late (9-10 a.m.?) in the morning.

The soil under the rock was dry (powdery) although most of the surround rocks overlay damp or wet soil and all exposed soil was soaked. The soil temperature at

Stebbins, R.
1950

Anadia bogotensis

Bogotá, 8800 ft., Cundinamarca, Colombia

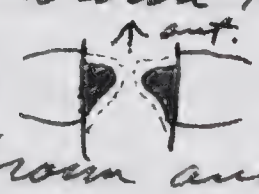
Nov. 14 The site of collection was 14.6°C; the air 6" above the ground, in the shade, was 12.3°C.

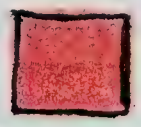
Upon being exposed for a few moments, the animal turned and crawled up hill, away from me, toward a small hole that had been covered by the rock. The hole was probed and seemed to be only an 1" or so deep.

JRH 1548 - Dark brown above; ventral surfaces sooty with whitish edging to scales (posterior edges); throat light purplish gray; undersides of feet yellowish; iris black with rather broad pale orange pupillary ring; ring nearly broken posteriorly.

Stebbins, R.
1950

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 RCS 5054 - $2\frac{1}{16}$" snout - vent - Upper surface of head, central longitudinal area of back, and tail dark brown; vague vertebral stripe of beige from occiput out onto tail base; transverse brown mark on head intersecting eyelids ↑ ant.; mark edged with light beige; mark black when animal caught; similar brown marks in sacral area as sketched  ↑ ant.; dorsal surface of hind limbs with broad brown and beige cross banding; fore limbs similarly but less contrastingly marked; sides beige with diagonal dark brown markings; ventral surfaces yellowish (dull pale orange yellow); scattered, sparse, minute dark brown stippling; dewlap orange red (skin between scales); tongue flesh; eyelids narrowly edged with pale yellow; iris appears dark gray with narrow whitish papillary margin.

 ← Color of gular skin. (not evident except when dewlap extended).

These lizards were common along a ditch bordering the E side of the Instituto Roberto Franco. The ditch had a muddy bottom, and in a number of places jams of brush, sticks, dead grass and other debris carried during periods of high water. The banks where heavily grown with grass and small green bushes. Several rodent (?) burrows were seen.

Stebbins, R.
1950

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 All the lizards along the ditch were seen on or near the ground. They seemed to be most often associated with the jams of debris where they were less conspicuous than in the green grass. They often leaped from stem to stem in plants (near the ground). They are slim bodied & slim legged lizards, brown in color. They are quite agile but not especially fast. They were quite easily caught by clapping my dip net over them and lifting the end of the net. Sometimes they ran up into the net.

In the woods and grassy patches N of the Institute, I saw 3 of these lizards. One was seen moving in a bush at a height of 4 ft.; another was 8" above the ground; the third was in grass only a few inches above the surface.

I believe I saw a total of about 12-15 of these lizard. Most seemed to be adult. Two little fellows about $1\frac{1}{4}$" snout-vent were seen.

The black transverse marking on the head is conspicuous in these lizards.

Stubbins, R.
1950

Anolis

Villavicencio
~~Buenavista~~, 1600 ft., Meta, Colombia

Nov. 19 Thermal data at collection site of adult individual, first seen in shade, in grass, about 8" above ground: air temp. 28.6°C in shade of grass at collection site (1:00 p.m.); mud at bottom of ditch, in sun (shaded by me during temp. recording), 33.7°C. Ditch 3 ft. deep here.

El Mico, 41 kms S, 22 kms. W San Martin, 1600 ft.
Meta, Colombia

Nov. 26 Found an individual running up the midrib of a banana leaf that hung nearly vertically. This was in shady, dense jungle growth near the spring where the El Mico ranch gets its water. It was about 11:30 a.m., a sunny day.

RCS 5139 - 50 mm. snout - vent — Above rich brown with yellowish beige broad dorsal stripe; brown transverse stripe on head; eyelids nearly reddish brown; ventral surfaces egg shell white with brown flecks; undersides of feet & hind limbs light brown; regenerating tail lead gray; pale yellow to cream pupillary ring; posterior part of iris copper; anterior part old gold. Lizard lightened to yellow brown as I held it (3-4 min.).

Stebbins, R.
1950

Anolis

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 29 RCS 5145 - $1\frac{1}{8}$" ± snout-vent — Above olivaceous lightening on neck just behind head and on sides to light olive; underside of head, body, and tail white (granistic) flecked with black; underside of limbs light gray with dusky variegation; light color of underside of tail tends toward cream; iris brownish bronze with pale gold pupillary ring.

This lizard was found about 10:45 a.m. inside a dead banana leaf, in the sun. I struck the leaf and the lizard jumped to the ground and then ran part way up the trunk of the tree. The collection site was in the stream side strip of jungle about 2 blocks W of the ranch. The lizard was found about 30 ft. from the rotten stump where Gonatodes was taken this date.

Stebbins, R.
1950

Cnemidophorus lemniscatus

Villavieja to Cerbatana, Huila, Colombia

Oct. 19 Enroute to Cerbatana shot 4 individuals, each about 3" snout-vent. Temperatures of these animals were as follows: (1) - 38.8°C; 10:45 a.m.; (2) 37.6°C; 11:00 a.m.; (3) - 39.6°C; 11:30 a.m.; (4) 38.2°C; 11:45 a.m. (J. Hendrickson's thermometer). All individuals were seen in low growth along dirt road, wet from recent rains.

#(2) had only left hind leg injured; animal was used in test for critical maximum temperature.

12:51 p.m. - Removed from sack & staked out in full sun. Legs held by string tied to waist.

Body temp. - 33.1°C

12:54 p.m. - 39.5°C

12:56 " - 40.6°C

12:58 " - 42.5°C - Losing coordination

1:00 " - 44.2°C - Unable to effectively right itself. 180 respirations / min.

1:03 p.m. - 45.0°C - On back; slight twitching of chest & gular area.

1:04 p.m. - 45.8°C - Chest movements gone; an occasional gular twitch; dead in few seconds after this - no movements whatever. Dead at 45.8°C.

Soil at surface, bulb covered with thin layer of soil - 46.8°C

Air ~~2:46 p.m. - 37.0°C~~ ½" above ground in shade at 1:12 p.m. - 34.0°C.

Stebbins, R.
1950

Cnemidophorus lemniscatus

Cerbatana, 5 Km. N Villavieja, 1400 ft., Huila, Colombia

Oct. 19 Specimen housed in camp. Tried critical max. test.

2:46 p.m. - 37.0°C.

2:51 p.m. - 43.6°C

2:52 p.m. - 42.6°C - mouth open
(slight breeze may have lowered temp.)
39 resp. in 20 sec.

2:56 p.m. - 44.°C - mouth open
148 resp. per. min. - 2:58 p.m. - mouth open. Still no loss of coordination - 44.5°C

3:02 p.m. - Scratching action of fore feet - attempts at digging. Lizard holds fore parts well off ground; head held upward at 45° ∠; mouth widely open.

3:05 p.m. - 45°C -

3:07 p.m. - 42.6°C - cool breeze.

Ground at surface in sun 44.5°C; 2:46 p.m.
Air ½" above ground in shade 32.6°C; 2:55 p.m.
Experiment discontinued because cooling off.
Lizard about 3" snout-vent; housed, in perfect condition.

Oct. 23 Found courting pair at side of railroad track. Male held female by skin of her posterior left side and was partly dragged as she crawled about. I shot male - cloaca 40.2°C; air ½" above ground in shade at 9:10 a.m. - 29.5°C; surface of damp ground in sun 36.3°C.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 23 Another adult, active in sun - cloaca 39.5°C.
Animal shot near railroad track.

(1)

Ad. ♂ 3" snout - vent

Time		cloacal Temp.		
12:28	-	38.2°C	-	air 38.5°C (½" above ground in shade)
12:31	-	44.2°C		
12:32	-	45.5°C	-	ground - 50°C+ mouth open; falls on back.
* 12:34	-	46.4°C	-	hind legs paralyzed
	-	47.2	-	forelimbs still movable
12:36	-	47.4	-	" " " ; lower jaw movable; hind quarters paralyzed.
~~12~~				
12:39	-	48.2	-	head and forelimbs twitching; few spasmodic gular pulsations.
12:40	-	48.5	-	All movements abolished - Dead.

(2)

←——— S-V ———→ ♂ Fresh from field

12.45	-	37.2		
12:46	-	42.4	-	no paralysis
		46.0	-	dragging hind legs.
* { 12:49	-	46.4	-	hind legs definitely paralyzed; bit me.
12:51	-	47.2	-	chest movements jerky; twitching of head, neck, forelegs.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 23 12:53 – 48.5 – dead.

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(3) Fresh from field

← S-V. → ♂

12:57 – 36.2 °C

12:59 – 43.0

1:01 – 44.6 – slight movements of hind limbs

* 1:03 – 46.2 – still slight movements of hind limbs.

1:04 – 46.0 – hind limbs paralyzed

1:06 – 47.4 – Can move forelimbs feebly + neck region.

1:09 – 48.3 – Dead.

37.3°C – air ½" above ground in shade.
50.0°C + soil at surface in sun.

Animals pronounced dead when all movement ceases, including gular twitching; temperature taken immediately.
As heat paralysis approaches, pupils dilate (?).

← S-V → Animal captive for several days.

Oct. 25 (4) Air 38.2°C; soil surface in sun 50°C +.

RCS 4815 1:42 p.m. 35.6°C

1:44 43.6 °C – very active

1:45 45.5 °C – hind legs sluggish

* 1:46 46.0 °C – hind legs paralyzed

1:48 47.7 °C – forelimbs thrust spasmodically forward

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

			and neck, gular & chest movements.
Oct. 25	1:50	48.0°C	- Dead.
(5)	2:00 p.m.	35.8°C	- very active
RCS4916	2:02	43.1°C	- no sign of hindlimb paralysis.
	2:03	45.3°C	- dragging hind legs but they can be moved slightly
*	2:04	45.2°C	- hind legs completely paralized.
	2:06	46.8°C	- can move fre legs slightly; short, jerky, shallow gular & chest movements
	2:07	47.9°C	- dead. Opened mouth & then no more movements.
Air 38°C		Animal had been captive for	
Soil 50°C +		several days.	

← S-V →

← (6) — SV →		ad. ♂	John Hendrickson's thermo.
RCS4917	2:15 p.m.	35.0°C	
	2:18	42.3°C	- active
	2:21	44.4°C	- beginning to pant; no hind leg impairment; ~~pe~~ bit me
	2:24	46.0°C	- hind legs partially paralyzed.
*	2:25	46.8°C	- hind legs paralyzed
	2:27	46.8°C	- last mouth movement; dead.
Air 37°C.			
Soil 50°C+			

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft, Huila, Colombia

Nov. 2 (1a) 9:00 a.m. - juv. $1\frac{1}{2}$" s-v, among rocks at side of track near camp. Captured.

(2a) 9:10 - $2\frac{1}{4}$" s-v. Not taken.

(3a) 9:25 - " " "

(4a) 9:30 - 2 juv. - $1\frac{1}{2}$" s-v in 1 ft. high mint (with orange & yellow blossoms, at side of track N of railroad bridge.

(5a) 9:38 - $2\frac{1}{4}$" s-v. Associated with ♂ (2) of thermal chart.

(6a) 10:05 - juv - $1\frac{1}{2}$" s-v } same general area, 60 ft.
2 ad ♂s - 3" s-v } S of (4) (See thermal chart).

(7a) 10:15 - $2\frac{1}{4}$" s-v - Associated with (6).

(8a) 10:23 - $2\frac{1}{4}$" s-v - 60 ft. from (6). ♀?

(9a) 10:35 - 2" " - 120 yds " (8a).
$2\frac{1}{4}$ to $2\frac{1}{2}$ " with 2" individual,

(10a) 10:45 - $2\frac{3}{4}$ ♂? } - 40 ft. from (7);
$2\frac{1}{4}$

See note after (11) - Thermal Data.

(11a) 11:35 am. - $2\frac{1}{4}$". Not taken.

(12a) 11:50 2" " "

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Nov. 2

Cnemidophorus hyperythrus
Cuchatana, Sinaloa, N. Villanueva, 1400 ft., Huila, Colombia

Thermal Data

No.	Time	Size (")	Sex	Body	Air	Substratum	Activity
1	9:14 a.m.	2 5/16	♀	38.3 °C	33.8 °C	45.6 °C (Crevice in tie)	→ In sun on tie of railroad track (Shot).
2	9:38 "	3 1/16	♂	37.0 °C	31.5 °C	36.6 °C (surface of damp sandy soil)	→ In sunny patch beneath mint with lavender blossoms. (Just S of railroad bridge).
3.	9:48 "	3	♂	39.2 °C	33.2 °C	36.2 °C (dried patch of soil in generally damp area)	→ Seen in sun near orange & yellow mint. 100+ ft. from 2.
	Less intense blue on throat & underside of tail than 2.						
4	10:00 "	2 9/16	♂	36.6 °C	32.0 °C (over moist sand)	35.4 °C (Sandy, clayey soil - moist).	Moderately active at base of grass-like plant 120 ft. from 3.
	Adult coloration only vaguely developed.						
5	10:09	2 1/4	♂	39.5 °C	35.5 °C (over rocks in railroad track bed)	44.° C - Crevice in tie.	Crawling over ties & among rocks near & under rail. 40 ft. from group 6a (see preceding page).
6	10:15	2 3/8	♂	41.0 °C	34 °C (over baked out soil)	Crevice in soil 40 °C.	Lizard runs from sun to shaded bank after another individual 100 ft. from 5.
7	10:40	2 5/16		40.8 °C	32.7 °C (over damp sand)	37.4 °C - Surface of damp sand in sun.	Lizard resting in scant shadow of small bush. 70 ft. from 7a.
	Adult colors vague						
8.	10:55	2 1/2	♀ (heavy with eggs)	41.4 °C	34.0 °C (Shade of low growing bushes over damp soil)	39.2 °C (Surface of damp soil in sun).	In mozaic of light & shade at edge of bushes. Quiet. 200 ft. from 10a.
9	11:00	2 1/4	♀ (heavy with eggs)	40.2 °C	34.4 °C (as above)	37.0 °C "	In thin shade of sparse grass. 30 ft. from 8.
	Tail missing.						
10.	11:10	2 3/8	♀	41.5 °C	38.° C (Over dried out hummock)	42.6 °C (Surface of nearly dry soil, in sun).	On hummock in sparse shade. 40 ft from 9.

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Nov. 2

Cuchillas, 5 Kms. N Villavieja, 1400 ft., Huila, Colombia.

Cremnophorus luminocaeliae

Thermal Data

No.	Time	Size Sex	Body	Air	Substratum	Activity
(11)	11:20 a.m.	3" ♂	37.1°C Pale; blue & green suppressed.	32°C (over damp dazzy soil)	31.7°C (damp soil & in shade; in sun. 34.9°C)!	Resting full length in shade of 2 ft. high grass. 175 ft. from (10)
			Lizards obtained to 200 yds. S of ~~camp~~ farm house along railroad track toward Villavieja. 45 paces S of telephone pole K131 / 1443. Started back to camp.			
(12)	11:32 a.m.	2 5/16 ♂	40.0°C	33°C (over damp soil in shade)	34.7°C (damp soil in sun).	In shade of grass on damp soil.
(13)	11:42	2 7/8 ♂	41.5°C Adult color quite well dev.	36°C (over dry earth)	42.6°C (crack in drying soil - in sun).	Seen running across rocky bed of railroad track.
(14)	1:35 p.m.	2 1/2 ♂	40.8°C	34.2°C (over decomposed granite?)	50°C +	Ran from side of grassy fill to bare hot surface; directly W of camp.
(15)	1:50 "	2 1/2 ♂	38.0°C	36°C (over mud cracked dry soil	44°C (soil).	Resting in open; sky overcast.
(16)	2:00 "	2 5/8 ♂	39.6°C	38°C - (over mud cracked dry soil)	45.5°C (soil)	Basking in open; sky overcast.
(17)	2:05 "	2 1/4 ♂	40.0°C	33°C - " at side of fill away from sun.	42.3°C "	" " "
(18)	2:30 "	2 5/8 ♂	39.1°C	33.4°C - Over mud cracked dry soil	38.5°C "	Running in open. Sky overcast.
(19)	2:35 "	" "	38.4°C	32.8°C (above bank)	"	40.2°C just under surface of dry soil. Basking on piece of bank

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Cnemidophorus lemniscatus

Cerbatana, 5 Kms. N Villavieja, 1400 ft., Huila, Colombia

(7) ad ♂; 2 5/8" snout-vent.

Nov. 2	12:20 p.m	35.3°C	
	12:22 p.m.	40.5°C	- very active
	12:23 p.m.	41.2°C	
	12:25		- air 36°C
	12:27	44.4	- mouth open - panting
	12:30	46.9	- hind legs partly paralyzed
*	12:31	46.7	- " " paralyzed
	12:33	47.0	- shallow chest & gular movements
	12:38	47.3	- occasional gular twitch. no chest movements. Dead few seconds later.

Substratum 46°C - 12:40 p.m.

Ad. ♂ 2 7/16" snout-vent. In captivity since Nov. 3.

Nov. 5	12:46 p.m.	35.3	
	12:50	45.5	- mouth opened
	12:51	46.4	- hind limbs paralyzed
	12:53	47.2	- switching of head from side to side; breathing rapid & shallow. Hind legs definitely paralyzed.
	12:55	49.0	- Few final twitches of gular area.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 2 Individual collected several days earlier, by Paulino.

Ad. ♂ 2 5/8" snout-vent

Villavieja, 1400 ft., Huila, Colombia. Ad ♂ RCS 5038 –

Nov. 9 Head scales from frontal forward green; posterior part of supraorbitals, parietals and occipitals olive green; light area between two dark dorsolateral stripes beige; light area consists of a central light beige line & two lateral lines setting off to darker beige lines (see sketch); dorsolateral stripes of black suffused with yellow green anteriorly & yellow posteriorly, stripes hence appear olive green; dorsal surface of tail uniformly beige nearly width of tail at its base but beige area narrows and largely disappears 2/3 way toward tip; from above tail has yellow green cola (2) in narrow zone on either side basally; lateral zones broaden distally & become intense & brilliant green (2) (almost yellow green); side of face powder blue (1); eyelids yellow (3), purplish (4) translucent patch in lower lid; head blue green between eye & ear; area of upper part of neck from ear to above insertion of forelimb suffused with yellow (5); light spots in this area cream to very pale yellow; sides light brownish purple or lavender (4) with white spots; area of side from base of tail to 9/4" anterior to groin

beige area

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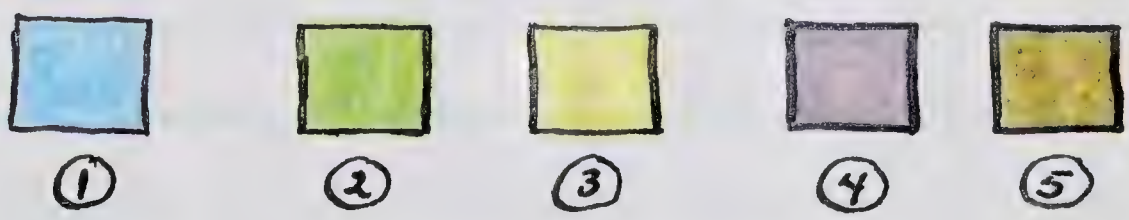
Cnemidophorus lemniscatus

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 yellow (5), as neck region; side of tail brilliant light green (2) becoming yellow green toward tail base; iris beige; underside of head to prominent gular fold powder blue (1); faint bluish cast on chest and underside of hind limbs; underside of tail powder blue centrally becoming whitish basally; ventrolaterally tail blue green; anterior surfaces of forelimbs powder blue; anterior surface hind limbs green; posterior surface prox. seg. forelimb green; distal seg. yellow (5) & black; dorsal & posterior surface hind limb cream & light beige spotted on dark gray brown.



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Nov. 2

Thermal Data

Cartagena, 5 kms. N Villavicencio, 1400 ft., Meta, Colombia

Cnemidophorus lemniscatus

No.	Time	Size	Sex	Body	Air	*Substratum		Activity
(20)	3:10 pm.	$2\frac{1}{2}''$	♂	38.5°C	34.4°C (over railroad tie)	40.8°C (crevice in tie)		Running over rocky bed of railroad track 250 yds. N Quebrada Lajas. Overcast. (Not saved).
(21)	3:15 "	3"	♂	34.6°C	32.3°C (soil - dry.)	34.5°C (dry soil, in open)		Darting about actively on well dried hard pan in sun, Sky overcast
Nov. 4								
(22)	9:27 am.	$2\frac{1}{4}''$	♀	36.2°C	28.7°C (over damp clay, in shade)	35.4°C (damp clay, alternately in sun & shade)		Running across rock bed of track.
(23)	9:40 am.	$2\frac{1}{16}''$	♀	37.0°C	28.0°C "	34.7°C "		" " clay soil at side of track, in mixed sun & shade.
(24)	9:45 am.	$1\frac{13}{16}''$ (immature ♂?)	♀?	40.9°C	33.8°C (over warm rocks of track bed)	39°C (thermometer bulb on surface of rock).		On rocks of track bed.
(25)	9:53 am.	$2\frac{11}{16}$ (ad. colors)	♂	39.5°C	30.6°C (over dry surfaced soil)	42*°C (dry soil in sun - still going up)		On dry surfaced clayey-sandy soil in open at side of track. Seen obscured momentarily.
(26)	10:05 am.	$2\frac{11}{16}$	♂	46.3°C	32°C (over clayey, nearly dry soil)	38°C - (surface of nearly dry soil in sun).		On clayey, nearly dry soil.
	// —	Quebrada	Lajas	— //				
(27)	11:05 am.	$2\frac{15}{16}$	♂	37.2°C	32.5° (over soil where lizard found)	42°C (soil where lizard found, in sun.)		On damp gravelly soil; active.
(28)	11:15 am.	$2\frac{3}{4}$	♂	38.0°C	36.7° (over sandy soil - coarse)	50°C + (soil in sun, dry)		Ran from track up vertical bank.
(29)	11:50 am.	$2\frac{3}{8}$	♀	40.5°C	35.7°C (over slightly damp soil)	44.5°C		Ran from sun to thin shade.
(30)	11:55 am.	$2\frac{3}{8}$	♀	41.0°C				
(31)	12:00 noon	$2\frac{5}{8}$	♂	42.3°C	35°C	50+		

* Not rocks of railroad bed always higher than soil.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 3 RCS 4995-4996 - Female noosed by Pereció; male hanging from her side, holding on with his jaws to the skin of her posterior side.

Nov. 4 Overcast morning. Walked from camp along track to quebrada Tajas. 1/4 mi. N quebrada saw first Cnemidophorus (juv.), 9:10 a.m.

Large adult ♂ at 9:20 (not collected) 200 ft. from juv., toward Quebrada Tajas.

Two juv. same size as above, at 9:25 a.m., 50 ft. from adult.

In addition to (25) & (26) shot this date for thermal data, I saw in same general area, 2 juv., 1 subad. & 2 ad. males. One of the males chased the other for 15 ft. — territorial behavior?

3 ad. ♂s, subad & juv. 50 ft. from above at 10:15 a.m.
1 ad. ♀, 1st cattle guard N of quebrada Tajas, at 10:25 a.m.
1 juv. 20 ft. from above ♀.
1 ad. ♀ 25 ft. " " juv. - 10:30 a.m.
2 ad. ♂ & 1 juv. & subad. at N side quebrada Tajas 10:40 a.m.

No further accurate check on total numbers active, made on this date.

Nos. (22) - (26) - See thermal data chart this date also gotten in stretch from 1/4 mi. N quebrada Tajas to Quebrada Tajas.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 5 Ad ♂ 2 1/2" snout-vent.

	11:35 a.m.	33.8°C
	11:36	40.5 – Very active
*	11:39	44.6 – Hind legs paralyzed
	11:41	46.5 – Only spasmodic chest & gular movements
	11:43	48.4 – Last gular movement.

Air 38°C

Substratum 50+°C.

Lizard had been in captivity; not a fresh field animal. (Captured Nov. 3).

Nov. 5 Ad. ♂ 2 11/16 snout-vent

	12:03 p.m.	35.0°C
	12:05	43.0 – Panting; release of fluid from vent.
*	12:06	43.0 – Hind legs paralyzed; breathing shallow & spasmodic.
	12:09	45.7 – Dead; no movements whatever.

In captivity unknown length of time. Probably for 3 to 6 days. Animal uninjured but looked a little thin. Removed from bag with 3 dead animals, probably collected at same time.

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Cnemidophorus lemniscatus

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 9:15 - 34°C ad ♀ - body covered with moist sand.

Trinidad, Boyaca, Colombia

Nov. 18 Noosed a large adult male as he sunned himself on a large stump 10 ft. long and 2 ft. in diam. Log at 30° angle to surface of ground, free end 3 ft. above ground. Basal portion concealed by shrubby growth to 4-5 ft. high. Growth where lizard found dense but edge effect only 10 ft. to N where grassy area begins. Native hut and clearing 30 ft. away. Collection site at E edge of avioneta landing strip. Animal obtained about 3:40 p.m. Scattered clouds; rain storm in distance but warm & sunny at air strip. Muddy ravine 50 ft. to E. Trees 30-40 ft. high along stream bed. Many prints of pigs and other livestock. RCS 5052.

Nov. 23 (1) Cloaca 37.6°; air 27.5°C; substratum (under in sun back of log) 44°C; 8:25 a.m. 2 15/16, ♂; active - running.

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3 kms. S Villavicencio, 1600 ft., Meta, Colombia

Brightly illuminated whitish dry soil substrate checked at 3:45 p.m. – 38°C. Must have been in sun for 4–5 hrs.

No.	Size	Sex.	Cloaca	Air.	Substratum		Time	Activity
(2)	3 15/16"	♂	38.8°C	29.5°C	37.8	Surface of log (inside termite tunnel)	9:00 a.m.	Crawling in sun along downed log.
(3)	3 1/8"	♂	39.3°C	31.1°C (shaded placed in dappled light + shade)	27°C substrate of sand + humus, not damp.		9:20 a.m.	Crawling in light + shade about down logs + brush in place with few herbs!
(4)	3 1/8"	♀	39.6°C	32°C (shaded by body – place in sun, 3" above ground	30.8°C shaded by body, in sun obviously		9:25 a.m.	Crawling along log, in sun.
(5)	3 7/16"	♂	39.5°C	32.4° in shade of hut.	27.3°C – humus in shade of herb		9:32 a.m.	Crawling in shaded brushy area
(6)	3 1/16"	♀ (heavy with eggs)	38.5°C	32.8°C in shade in dapple (scant brush)	33°C – small patch of sandy soil in sun!		9:40 a.m.	" in dappled light + shade
(7)	3"	♀ "	41.0°C	31°C in shade of herbs	30.5°C damp soil in sun at base of herbs		9:55 a.m.	In mixed light + shade among grass + other herbs along trail by river – heavy tree growth on other side
(8)	3 1/8"	♂	39.8°C	31.5°C (air 3" above ground in sunny place (but shadowed by me)	32.5°C Decayed wood at surface in sun (shaded by my body.		2:35 p.m.	moving about in dry sticks + herbaceous growth.
(9)	3 3/8	♂	36.6°C	28.6°C, 15' from river, over damp sand of side gully	31.3°C. Dry sand at side of gully in shade.		2:55 p.m.	Among leaves + branches of plant – Slight movement.
(10)	3 7/8"	♂	34.5°C	29.6°C. Among herbs 4" high.	29.8 (Soil at base of herbs)		3:20 p.m.	moving with moderate speed among herbs.
(11)	3 1/4"	♂	39°C	31.4°C In clearing, shaded by me!	32.2°C Dry soil (Shaded by me.)		3:35 p.m.	moving along in among and among sticks.
(12)	3"	♂	37.5°C	33.6°C Over trash by log in clearing	29.5°C – Dry soil		3:40 p.m.	"

Gymnodactylus lemniscatus

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Cremidophorus lemniscatus

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 Adult male - Underside of tail and hindlimbs blue green to yellow green, tending toward latter anteriorly near tail base; underside hindlimbs lighter than underside of tail; posterior part of abdomen & femoral pore region pale yellow; central belly whitish with extremely pale lavender cast; underside of head blue green, pale greenish yellow, powder blue to whitish; anterior surface distal segment of forelimb greenish blue; dorsal surface of head body & tail base brown; tip of snout & sides of head along contour and edge of eyelid obscurous to dull green; green dorsolateral stripes over forelimb insertion & on sides of neck; sides of tail brilliant blue green; sides between limbs lavender with pale greenish yellow to blue green spots; snout with yellow green line, continuing with neck line, bordering lower side of black to dusky dorsolateral dark line; iris beige. This description based on 4 adult males. Based on recollection of Magdalena Valley form & color description of representative adult male, following differences emerge: Villavicencio male has pale yellow (2), pale blue (2), pale blue green (3), or whitish (1) throat; Magdalena male has powder blue to whitish throat; underside of tail of all Villavicencio males is blue green to green; that of Magdalena male is powder blue; Villavicencio males have light blue green color underside hind limbs; Magdalena male has powder blue color here;

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Cnemidophorus lemniscatus

~~Villavicencio;~~ 5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 Villavicencio male has darker brown dorsal color; dorsal area beige in Magdalena male.

General impression is that Villavicencio male average larger, has more green in coloration (blue suppressed and has darker brown dorsum than Magdalena Valley (Cabetana & Villavieja) animal.

8 adult males used in study of Villavicencio animals.

Adult female (2 individuals) — underside of head yellow; chest pale yellowish to cream; belly pale yellow with greenish cast; underside tail & hind limbs pale yellowish green, tending toward blue green distally on tail; underside forelimbs light yellow; above uniformly brown, to tip of tail (in male, blue green color of sides of tail encroaches up on to dorsal surface, especially distally); dorsolateral lines of dark brown & thin lines of beige; sides of tail basally & sides between limbs, spotted with pale greenish to pale blue green spots; sides between limbs tinged toward lavender, as in male; from side, upper half of tail brown, lower half pale blue green (in male entire side of tail brilliant blue green except upper half basal 1"+; side of neck light brown with beige & pale bluish green spots & lines; side of face bronzish or pale yellowish (in male powder blue to pale yellow green); no green color on canthus or over eyelid, as in male; eyelid margins yellow, as in male.

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Mnt. 23

Eleutherodactylus lacrimosus

Stems. S Villavicencio, 1600 ft., Meta, Colombia

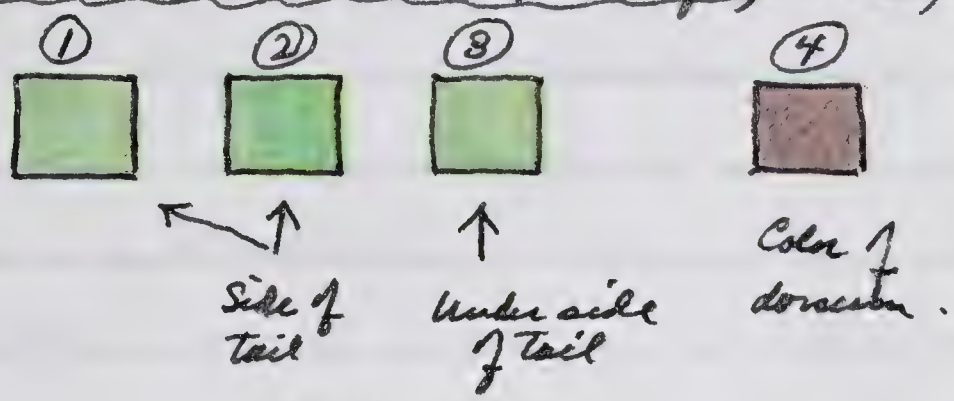
No.	Size	Sex	Time	Cloaca	Air	Substratum	Activity
(13)	$3\frac{5}{16}$"	♂	3:50 p.m.	37.4°C	30.4°C, in shade	30.4°C - Dry soil in shade	Moving about with short rests in mixed sight & shade.
(14)	$3\frac{1}{4}$"	♂	3:55 p.m.	39.4°C	31.2°C, in shade	30.7°C - "	"

Stebbins, R.
1950

Cnemidophorus lemniscatus

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23



Male Colors

1 & 2 are actually brighter, more blue green or green.
3 - should have slightly more blue in it & be lighter -

This lizard coexists with an Ameiva which it resembles in scalation and coloration. There is certainly slight ecological segregation, as the Ameiva seems to prefer denser plant growth; the Cnemidophorus is more common in clearings. The latter has a nervous habit of rapidly vibrating one forefoot & then the other.

Stebbins, R.
1950

Kentropyx striatus

El Mico, 41 kms. S, 23 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 28 Cloaca 38.5°C; ~~substratum~~ air 31.4; substratum 32.5°C

1:25 p.m. Hard packed, damp sand (red brown), in sun = substratum. Six inches above ground, in temp. shade = air. Ad. ♀ with eggs.

① ② ③

Dorsal surface of head beige; central broad stripe of green ①, lightening laterally ②; first dorsolateral stripe brown ③; next one greenish yellow, lightening to cream on neck & white on head; next dark stripe similar to first ③; then comes white lateral stripe; then yellow brown; then dirty white one; then yellow brown with gray one; below whitish; pale pink on underside base tail; light color at tail base above greenish yellow; pure white on underside head, near cream on belly; rust over insertion of hind limb & at base of side of tail; posterior margin of vent pale orange; iris orange beige; upper surface tongue gray; ~~top~~ ⅔ of tail (with spots) × sides brown, with olive cast.

Lizard was found on trail 8-10" wide in deep, coarse, closely set bunch grass. Grass to about 2 ft. high. Slope 15° to W. Area well illuminated. Ground damp from rain of last night and this morning

Stebbins, R.
1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 22 Broke open termite riddled downed tree about 25-30 ft. from river near camp. Numerous termite channels with many termites. Wood moist and dark colored, appearance and consistency of dirt. Two geckos caught. Had apparently been inside limb. Temp. of decayed wood - 25°C; air 3" above ground in shade, 27°C; 8:10 a.m.

Oct. 23 Found pair on tree trunk near our tent, about 7:30 a.m. Bright morning but tree trunk in shade. Caught one individual.

Nov. 2 Above dark gray almost sooty; vague dark brown spots on back; tail with faint suggestion of dull pale yellow mottling; dark color of head suffused with brown; throat with yellow and orange blotching; anterior surface of eyelid rust; belly dirty white with purplish blue gray laterally; chest gray; underside of tail light beige with gray markings. Snout-vent, $1\frac{3}{8}$" (RCS 4973) Animal brought in by Alfredo Calderon. Color notes from recently dead animal.

Throat

Stebbins, R.
1950

Gonatodes

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6

RCS 5012

♂ RCS 5012 - Dorsal surface of body and limbs sooty brown (almost black) with small vague beige flecks; tail crossbanded with ashwhite; dark scales of dorsum of head lightened by numerous yellow scales (readily seen under magnification) - general effect head appears yellow brown; anterior edge of eyelid yellow; iris sooty with silvery to whitish pupillary ring & few light flecks peripherally; side of neck head & along edge of upper lip powder blue (under magnification scales appear nearly pure white); ventral light area on belly & in pelvic area white (dirty white); under side of limbs gray; under side of tail light beige & brown; belly with black ventrolateral areas; throat yellow with light brown markings. $1\frac{3}{8}$" snout-vent. Color notes from anesthetized specimen.

Stebbins, R.
1950

Gonatodes

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 ♀ RCS 5013 - Above variegated light & dark colored; colors are black, dark gray, brown, and light beige; beige most noticeable ~~on~~ along middle of back and as paired blotches on tail; toes black and whitish, banded; ventral surfaces cream to dirty white, cream especially on lower abdomen; gray brown blotches on throat, sides of body & tail.

Rt. eye
ant. →

Ad ♂ RCS 5014 Colored like RCS 5012. Note distribution of white scales on side of face & neck (see sketch - blue areas); under magnification scales that produce these powder blue areas are seen to be all white and intermixed with black scales - mixed produces bluish gross effect; some of labial scales are also white; iris color under magnification, beige; pupillary ring nearly white.

RCS 5014

♂ RCS 5015 - Like 5014 but animal in light phase; under magnification numerous light gray scales intermixed with fewer dark brown scales; head more yellowish above than animal in dark phase; all scales from eyes anteriorly orange yellow; few sooty scales cloud color posterior to eyes;

Stebbins, R.
1950

Gonatodes albogularis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 yellow cola extends 2/3 to 3/4 distance between eye & insertion of forelimb; white bands on toes seem wider than in dark phase animal; ventral light area wide & ventrolateral dark areas lightened by numerous light flecks anteriorly; throat bright yellow.

Juveniles 13/16" snout-vent – Dorsally with paired light beige spots & scattered specks on sooty ground; no sign of yellow head cola of male; venter light gray; darker gray streaks on throat; pupillary ring pale dull yellow

These geckos were found as follows: An adult ♀ was taken at side of arid gully, among rounded sandstone boulders, next to a wooden post fence. There was little vegetation but short grass and scattered clumps of a cat's claw-like plant. An adult male & female were found under loosening bark of fence post that was part of a fence that bordered a heavily vegetated gully; arid short grass, rocky slope on opposite side of fence. Lizards kept post between me and them. A juvenile was also taken here. An adult and young were found under thin flakes of exfoliating mortar in culvert under railroad track, 150 ft. NW of camp. Animals collected from 9:30 to 11:30 am,

Stebbins, R.

1950

Gonatodes albogularis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 This species has also been seen on a tree trunk in camp and one was stirred out of a large bird nest in a clump of organ-pipe-like cactus.

Stebbins, R.
1950

Iguanidae

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta Colombia

Nov. 29 Dorsal surface variegated – ash gray, light gray & blackish brown; yellowish brown on upper surface base of tail & on snout; regenerated portion of tail brown with black markings, lightening toward tip; tail pale yellow and dark gray, crossbanded; white line on shoulder, edged with black; underside of head and throat white with sooty spots & streaks; ventral surface from chest to base of tail, just behind vent, yellow; underside of hind limbs yellow, fore limbs yellow cream; underside of tail, except for extreme basal portion light orange; underside regenerated tail next clouded with dusky streaks; iris olive, with narrow orange gold pupillary ring. Female with single, large, pale yellow egg showing through abdominal wall; egg about 10 mm. in length.
RCS 5144, 45 mm. snout-vent.

I found this lizard on the side of a rotten stump among predominately banana (?) growth in the stream side jungle near the spring, 2 blocks W of the ranch. The stump was much rotted. Dr. Medem says this lizard is diurnal and that he has found remains of termites & a scorpion in the stomach contents. The skin of this lizard is so tender that it is almost impossible to hold one without the skin tearing. I got the lizard about 11:00 a.m. in a shady section of the forest.

Stebbins, R.
1950

Sphaerodactylus

½ mi. E Buenavista, 3100 ft., Meta, Colombia

Nov. 21 Small Gonatodes-like lizard tumbled from loose soil as I rolled rock on 50° slope 5 ft. upstream from place where amphibian eggs found. Soil wet, 20.5°C; 9:30 am. Stream 3 ft. away.

RCS 5069, 33 mm. snout-vent — Above dark brown with faint rusty cast, brightest on tail, rust looking on head; dorsal light-colored bars beige to light brown, indistinct; lower sides rust; sides of head & neck olivaceous; iris brown with fine, beige, pupillary ring; throat & chest cream; under magnification margins of light area on under side of neck, yellow; yellowish color on gular area, especially posteriorly; belly gray with very light beige-margined scales; underside of tail & hind limbs light pinkish beige; underside of forelimbs light olive brown; diagonal pale yellow streak on lower jaw, behind eye; regenerating portion of tail black; anterior surface of forelimb, pale yellow; bar at base of posterior surface femur, beige.

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 Got another one of these lizards, among damp leaves, 5 ft. from small canal (See account Gonatodes puntatus) in dense jungle growth. Animal was exposed when first seen. Time about 3:45 p.m.

Stebbins, R.
1950

Thecadactylus rapicaudus

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 Cloaca 26.5°C; air 6" above floor in chapel 25°C; 8:50 p.m.

RCS 5040 —

Dorsal surfaces light ash gray, gray, brownish gray and black in mottled or variegated pattern; black in small scattered flecks; iris yellowish beige, almost yellow ocher; below uniformly pale yellow except underside of tail which has poorly defined olive brown transverse bands; undersides of toes white (lamellae white); upper surface toes pale yellow.

Rt. eye
ant. →

Stebbins, R.
1950

Iguana iguana

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 23 RCS 4902. Large adult, snout-vent about 11" and tail about 30". Climbed trunk of large walnut-like tree 1/4 mi W of camp. Animal shot when at height of about 60-70 ft. Hung of small stub for about 1/2 hr. Finally dropped to ground. Animal obtained about 10:30 a.m.

Dorsal surfaces green grading to light tan mixed with light green on sides; tail banded dull black and yellowish; dorsal surface of head with sooty gray scales edged with orange yellow; large scales on upper surface of neck olive set in rust; body bands brown grading to black on lower side; flecked with green dorsally; upper surface of limbs rust to tan, nearest rust on anterior pair; green on limbs anteriorly; dorsal crest scales black or olivaceous or beige in keeping with nearby ground color; tips of scales often tipped with orange; anterior throat and enlarged scales below ear whitish; dewlap whitish with pale rust tinge, olivaceous posteriorly; underside of body & limbs pale yellowish green; iris dark brown to blackish mottling with olivaceous flecking & pale greenish yellow pupillary ring, broken above & below pupil.

Stebbins, R.
1950

Iguana iguana

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 28 About 1/4 mi. E up quebrada S of camp, came upon an Iguana about 1½' snout to vent. I had been stalking a kingbird. The iguana was in the same bush, 6 ft. from the bird. The bush was about 8-10 ft. high and was situated near the crest of a hill about 50-60 ft. above the quebrada, on the S side. A lateral gully, heavily vegetated joined the quebrada here. The surrounding country was barren, rocky terrain with sparse, short, green grass. The lizard rested on top of some branches, in the sun.

I shot at him with a 38 shot shell at a distance of 15-20 ft. He scrambled over the branches and dove through the air, lance-like down into the heavy growth of the ravine, 30-40 ft. below. I was unable to roust him out. Time about 10:00 a.m.

This afternoon a boy brought in a large iguana captured at the Finka Argentina about 10 kms. E Villavieja. It was captured today, by snaring. Its tail had been lost about 8-10" from the base. Otherwise it appeared in perfect condition. It attempted to defend itself by lashing with its tail stub and by opening its mouth.

Stebbins, R.
1950

Iguana iguana

Corbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 28 The animal was gotten today, 10 kms. E Villavieja (Quebrada Lajas) by Alfredo Calderon.

Oct. 30 An immature individual about 14-15" in snout-vent length was brought in by Alfredo. His dog had captured it. The lizard seemed to be paralyzed posteriorly. It was taken at our Corbatana locality.

Stebbins, R.
1950

Iguana iguana

Villavieja, 1400 ft., Huila, Colombia

Nov. 5	Time	Cloacal Temp.	Ad. ♂ RCS 5002
	1:00 p.m.	32.3	
	1:05 p.m.	35.0	
			Alternately lifts forefeet from ground; apparently soil uncomfortably hot.
	1:10 p.m.	38.8°C	- Had been resting quietly; now began to crawl; lifted hind feet briefly after coming to rest; respiration has sped up.
	1:12 p.m.	40°C	- Mouth open; panting. Lifting feet one fore foot, then other; obviously uncomfortable. Actually crawled off.
	1:14 p.m.	41°C	- Actively crawling about, seeking shade; mouth widely open
	1:18	41.9°C	- 32 resp. in 15 sec (12-10-10) 33 resp. in 15 sec. mouth widely open.
	1:23	44.0°C	- 21 resp. in 15 sec. 24 " " " " } labored deep breathing no paralysis; perhaps slight impairment, not sure.

Air 36.5°C, 2½" above ground in temporary shade.
Specimen collected Nov. 3, by river. Substratum 50+°C.

			looking about in agitated manner; sways occasionally from side to side; very definite lifting of fore feet; wheezing
	1:26	45.1°C	- Slight dragging of hind legs; wheezing
	1:29	45.5°C	- Definite impairment of hind legs; anal sphincter relaxed; defecation.
	1:32	45.7°C	- Hind quarters completely paralyzed.
	1:34	46.6°C	- Only movement - slowly closing eyes; no doubt, gular or other movement.

Stebbins, R.
1950

Iguana iguana

Villavieja, 1400 ft., Huila, Colombia

Nov. 5 1:38 46.5°c - vomiting-like gaping of jaws. Last movement as we took temp. Pupils dilated. Dead.

RCS 5002 - 1' snout-vent (measured) Cola notes several hours after death.

Large scales of dorsal surface of head dark gray on snout & between eyes to gray in occipital region, scales edged, principally anteriorly with light orange; supraocular scales gray with scattering of pale orange scales among them; dorsal surface of neck with mixture of pale orange & light olive green scales; dorsal surface of body yellow green becoming nearly lemon yellow on sides; body bands dark brown checkered with small lemon yellow to greenish yellow scales; bands just behind forelimbs & in sacral area black, as are tail bands; tail bands dirty white; dorsal crest scales blackish, & dull straw yellow with occasional touches of orange, depending on whether opposite black or light band; upper surface of limbs colored like body but increasingly greater numbers of orange scales distally on forelimb; upper surface of forefeet orange with few yellow scales; similar tendency on hind limbs but lighter orange; tympanum & closed lids dull yellow with faint greenish cast; scales of side of face darker with orange margins; enlarged scales of lower

Stebbins, R.

1950

Iguana iguana

Villavieja, 1400 ft., Huila, Colombia

Nov. 5 jaw dirty white; dewlap dirty white grading to sooty posteriorly & ventrally, flecked & streaked with orange anteriorly. ventral surface of body & limbs pale yellow with greenish cast; underside of limbs like dorsal surface but all colors subdued; same goes for tail; iris dark olive grading to dull gold in upper ¼ & with pale yellow pupillary ring; pupil slightly vertically oval; tongue pink, reddish toward tip; some greenish in light colored tail bands when viewed from above.

When approached this lizard tilts & compresses its body, presenting a maximum of tightly drawn skin toward the intruder. The pose may reduce the opportunity for a predator securing a hold on (and) may serve to readily unleash the tail at an enemy.

Stebbins, R.
1950

Liocephalus trachycephalus

Bogotá, 8800 ft., Cundinamarca, Colombia

Nov. 15 JRH 1524 - Dorsal surfaces olive brown; vague dorsal dark markings blackish brown; throat bright yellow; chest and remaining underparts light pinkish or rose with faint orange cast; under side of feet almost black; ventral surfaces spotted with brown; throat unspotted; regenerating tail sooty; line over eye pale yellow; yellow line on neck just below ear; yellowish suffusion on sides from axilla to near groin; iris pink to coppery.

Stebbins, R.
1950

Mabuya mabuya

Villavicencio, 500 m., Meta, Colombia

Nov. 19 RCS 5053 - 3" snout-vent - Broad dorsal stripe from upper surface of head to tip of tail, beige; dark brown lateral stripe from tip of snout through eye to over hind limb insertion posterior to which it lightens, fading to gray brown on tail and largely disappearing about 1/2 way out on tail; lateral stripe on head and body margined ventrally with white; ventrolaterally (lower sides) brown; ventral surface unmarked white (or soiled white); eye appears black; tongue with light battleship gray central area (longitudinally striated); underside of tail toward tip light gray. This skink reminds me greatly of Eumeces callicephalus but without blue on tail. Under sides of feet of RCS 5053 black, with black color stopping abruptly and contrastingly at white color of remainder of underside of limbs; upper surface of limbs with beige or brown scales heavily outlined with dark brown to black. Color notes from shot specimen, 3 1/2 hrs. after death.

This individual was found lying along a horizontal branch about 1 1/2 ft. above the ground in a moderately dense bush. A drainage ditch lay to the E and an open grassy field beyond the ditch. To the W was dense brushy growth with scattered, small

Stebbins, R.

1950

Mabuya mabuya

Villavicencio, 1600 ft., Meta, Colombia

Nov. 19 grassy clearings and paths. A barb-wire fence separated the field from the woods. The lizard was in an "edge" situation. The animal rested in mixed light and shade. It was about 3:00 p.m.

Stebbins, R.

1950

Toad lizard

Buenavista, 4000 ft., Meta, Colombia

Nov. 21 Toad-like lizard (RCS 5104), about 4" snout-vent, cloaca 28°C after about 2 min. delay in recording; air at collection site 2 ft. above ground, in shade, in bush, 23.5°C. Bush vine like tangle 20' x 6' x 5' high. Gully where toad found 6 ft. to N. Lizard among shade of leaves when first seen. Caught by hand. Time 11:35 a.m. John found eggs (with embryos), probably of this species. Collection site 30 ft. from crest of hill. No trees.

Photograph, in color, taken Nov. 22, 1950.

Stebbins, R.
1950

Atractus crassicaudatus

Bogota, 8800 ft., Cundinamarca, Colombia

Oct. 15 An individual about 10" long, with orange yellow markings was found under rocks in a gully at one side of a small stream. The snake was about 10 ft. from water. The gully was 3 ft. deep and only about 3 ft. wide at the top. There was considerable plant growth on its sides. The snake was found in the same area where Oedipus was taken (see sketch under this form).

Nov. 14 ~~Oct~~ Found an adult under a rock on the downhill side of the trail (See sketch under Anadia bogotensis). Soil damp and mixed sand and humus (mostly sandy), brown in color; soil 14.6°C. Cloaca of snake 14.5°C; air 6" above ground, sky overcast, 7 children + myself standing closeby, 14°C. Snake found 5 ft. from an Oedipus.

Stebbins, R.
1950

Boa

Villavieja, 1400 ft., Huila, Colombia

Nov. 8 Dug up a boa killed and buried yesterday by a man on the island in the river W of Villavieja. Snake found under litter of leaves and trunks of bananas in banana patch.

Stebbins, R.
1950

Constrictor constrictor

Villavicencio, 1600 ft., Meta, Colombia

Nov. 20 At Instituto Roberto Franco, Hector Acebes, Dr. Zulueta, and several Colombian assistants were photographing 3 boas, one about 2 ft. long, another ≈7 ft., and a third about 8 ft. The Colombians were handling the snakes with sticks. The 7 ft. animal was much ~~wild~~ disturbed and was hissing vigorously. I was impressed by the duration and uniformity of this coarse "hissing steam" sound. The hiss was timed repeatedly as follows - 14, 16, 16, 15, 11 seconds (each figure represents the duration, in seconds, of a hiss). Inspiration required about 3 seconds.

Mr. Acebes took photographs of John and I with the largest snake, a female (very small spurs and no indication of hemipenes). She was gentle.

The larger specimens were taken at Restrepo, Meta, Colombia, about Sept. 20, 1950.

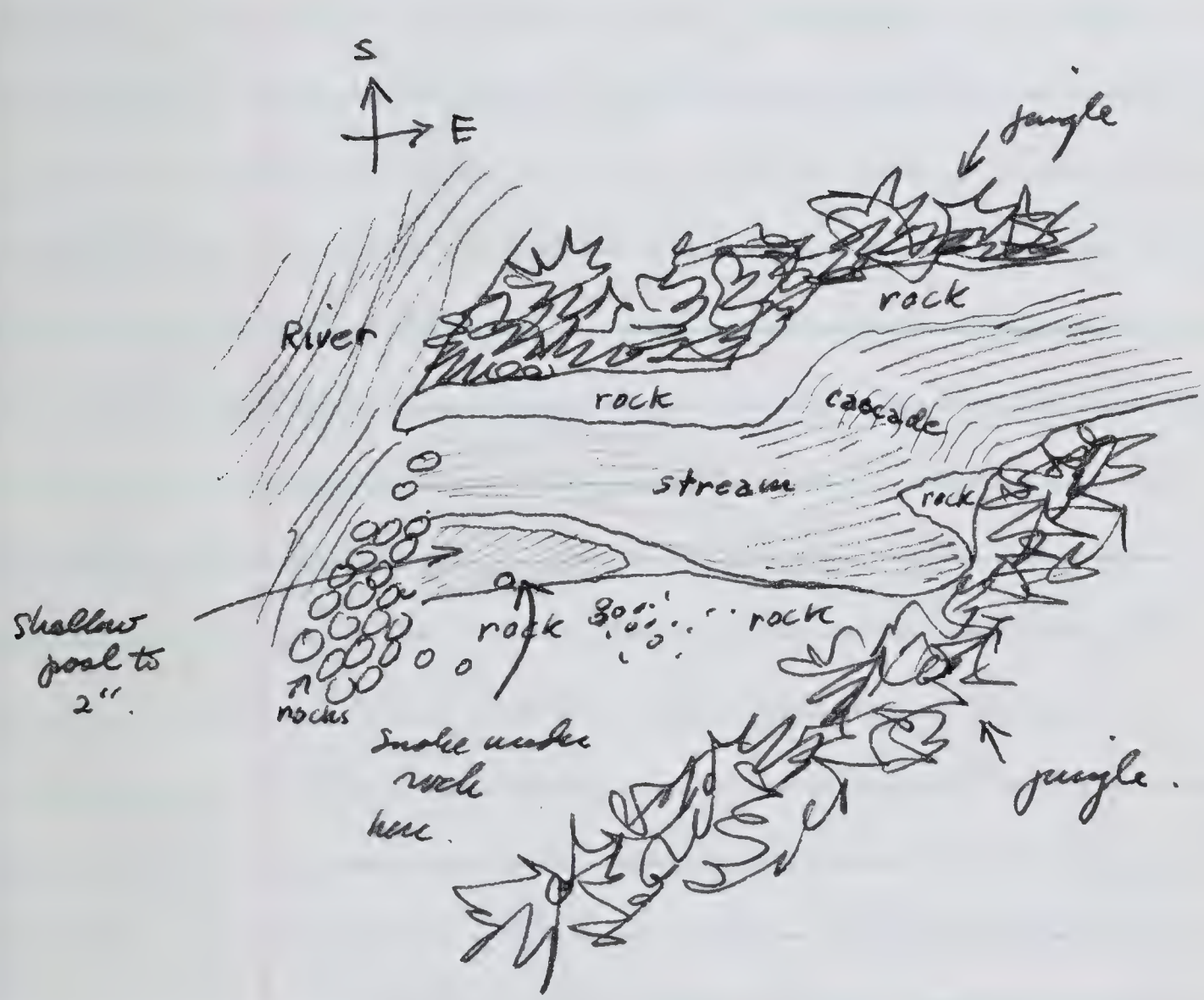
A 2½-3 m. female gave birth to 45 young (some still born as embryos). They were in cellophane-like membrane when parturition occurred. The young were about ≈ 30 cm. long at birth. (Reported by Dr. Zulueta).

Dr. Zulueta purchased the smallest of the above 3 boas from a Colombian lad, paying 3 pesos. Snake was obtained by the boy, today, at Villavicencio.

Stebbins, R.
1950

46 km. S, 22 km. W San Martin, Meta, Colombia

Nov. 25 Snake about 8" total length found in water ½" deep, under water worn boulder 8×10". Water 28°C; air 2" above water, canyon in shade, 26.4°C; 3:20 p.m.



Air View

RCS 5137 - Ground color above beige with vague sooty marks; below cream, grading to whitish on underside of head, with black markings; iris olive beige; tongue purplish sooty; dorsal surface of head slightly darker than rest of body.

Stebbins, R.

1950

Vicinity of El Mico, Meta, Colombia

Nov. 30 A small water snake, about 10" total length, was placed in a 2 quart glass jar with some water plant. John introduced 2 small fish, one about 1¼" long, the other 1½". The snake at first writhed about, appearing almost uncoordinated when the water the fish were in was poured into the container with the snake. This behavior may be related to a change in temperature. After a few moments, the snake began to move its head in a jerky manner and its tongue was frequently protruded. It appeared to be searching for prey. Several times it came within an inch or so of a fish but although there was no obstruction to vision, the fish was not taken. Feeding occurred when the head of the snake came within ½" or so of a fish. It appears that underwater vision is weak and that the olfactory sense may be used. The frequently protruded tongue is suggestive of the latter. Such use of the tongue (as an auxiliary organ in olfaction) is well known for snakes under terrestrial conditions. This is the first time I have noted its use under water.

Both fish were eaten rapidly, swallowing being completed in a minute or less. The snake was skillful in manipulating the fish in its jaws. The fish were seized midway on the body and were

Stebbins, R.

1950

Helicops

Vicinity of El Mico, Meta, Colombia

Nov. 30 then shifted by jaw and head movements of the snake for swallowing headfirst. The jaws were rapidly "walked" over the prey. The snake did not use its coils to kill, hold, or manipulate its prey.

Foregoing notes 4:30 p.m., Dec. 1, 1950.

This morning, Dec. 2, Dr. McDem told us he was able to lead the snake about by moving the shiny base of his pencil along the outer surface of the jar. The snake followed the pencil, with its nose against the glass.

Stebbins, R.

1950

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Oct. 30

RCS 4987 - Dorsal portion of red bands scarlet lightening slightly toward ventral aspect; dark bands black, broken with white; all bands completely encircle body; light color on head approaches cream; iris dark brown, lightest in upper part; tongue dark brown. Snake about 18" snout-vent. Color notes Nov. 3, 1950 from living animal. Animal ~~brought~~ brought in by Alfonso Calderon. It was found in combination banana and corn patch, 300 yds. E of camp. According to Calderon it was feeding on *Bufo marinus* and was in a plant called "mata yucca".

RCS 4987 - Critical Max. Therm. Tolerance Test

		Cloacal Temp.	
	1:47 pm.	- 30.3 °C	
*	1:50	38.2 °C	- paralysis - nervous, jerky wagging of head + neck.
		39.0 °C	- mouth open
		39.8 °C	- mouth wide open
	1:52	41.2 °C	- slight movements of jaws.
		42.0	- Dead - stiff; no movements.

* Critical maximum (?).

Snake herded in sun throughout test.

Stebbins, R.
1950

Leimadophis

Bogotá, 8800 ft., Cundinamarca, Colombia

Nov. 14 Individual found under rock 10"x10"x5" on slope 15-20° toward W. Substratum slightly damp, 15°C; air 12.5°C. No canopy; area fully illuminated all day. See account of *Anadia bogotensis* for further details on habitat. This species collected 10 ft. down slope.

JRH 1549 - Dorsal surface olive; when scales spread, anterior surfaces or edges seen to be white; vague blackish lateral stripe begins to appear about at half way point on body and becomes increasingly better defined to tip of tail;

face ~~fa~~ below supralabials, orange yellow; tongue blackish; ventral surface of body, cream; becoming orange yellow laterally on gastrosteges; orange yellow color increases posteriorly, under side of tail uniformly orange yellow or near orange; ventral surface marked with blotches of slatey black beginning 2" behind head and extending to vent; stripe on side on posterior ⅓ of body (including tail) dotted above, & less consistently below, with cream; yellow orange color quite bright laterally in neck region (~~2 to~~ to 2" behind head).

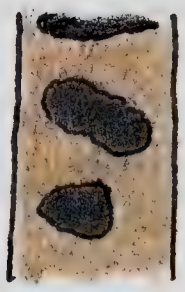
Stebbins, R.
1950

Leptodeira ?

5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 6 8" snout-vent. Living specimen.

Rt. eye
ant. →



Ground color above on body as sketched; pale dull yellow on neck anterior to first black neck bar; dorsal surface of head brown; ventral surface light pinkish beige without markings; iris light gray.

Specimen collected Nov. 4 by Felipe Gutierrez.

Stebbins, R.

1950

Leptodeira

Apiay, 1600 ft., 12 Kms. SE Villavicencio, Meta, Colombia

Nov. 20 RCS 5115, about 10" snout-vent — Ground color above light yellow brown; dorsal dark saddles black; dark blotches of sides, dark brown; ventral surface cream to very light beige; iris beige; pupil vertical. Brought in from army base, by soldier.

Stebbins, R.

1950

Oxybelis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 7

Body - 22 3/8"; tail - 14 1/2"; head absent.

RCS 5020 - Ground color above about as sketched (1), uniformly so; anterior to midpoint of body, when skin stretched can be seen cream colored (very pale yellow) a blackish bar that runs along edges of scales in longitudinal direction; other skin light gray between scales; posterior to midpoint of body only narrow margin of blackish or dark gray color shows between scales; ventral color light yellowish tan with less ash gray than dorsum; at beginning of anterior 1/3 of body, pale yellow begins to enter ventral color; 5" before head distinct pale lemon yellow appears and becomes increasingly more intense anteriorly; 1 1/2" of neck behind head colored like (2); cannot describe head as it was shot off.

Perico and Paulino obtained above specimen. It was found crossing railroad ~~about~~ track about 1 km. S of camp. Tall grass on both sides of track (kind fed upon by seed eater - Sporophila). Large trees and heavy brush at fence line (more non-spiny mesophytes than spiny xerophytes).

Snake held about 15" of anterior portion of body off ground and head about 8" above ground.

Stebbins, R.

1950

Oxybelis

Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

Nov. 7 Head swayed rapidly from side to side; tongue frequently protruded; snake allowed close approach, Paulino almost stepping on it. Animal was moving slowly; time about 10:30 a.m. (Above information related by Paulino & Perico.)

Stebbins, R.

1950

3 Kms. N Cerbatana near road to San Alfonso from Villavieja, 1400 ft., Huila, Colombia

Oct. 28 This snake was obtained by Felipe Gutierrez. It was taken on open ground with short, thinly scattered grass. (RCS 4985).

Oct. 29 What may be the young of this species was brought in today. (RCS 4986)

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Cerbatana, 5 kms. N Villavieja, 1400 ft., Huila, Colombia

RCS 4985.

		Critical Maximum Cloacal Temp.	
Nov. 4	1:55 p.m.	29.6 °C	
	* 2:00 "	37.6° c	- loosing coordination
	2:01 "	38.5° c	- flipped over on back; completely uncoordinated.
		39.4°c	- sitting of head region; wholly uncoordination
	2:02 "	40°c	- Movement ceased

* - Critical maximum.

Snake herded in open by J. Hendrickson & al. It was unable to reach shade and its activity was limited by holding it part of the time by its tail.

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Snake

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 Cloaca 26.2°C; damp firm dark brown substratum 25.2°C; 11:05 a.m.; air 3" above site 28.5°C. Snake in level area at side of trail under palm frond. Heavy forest on either side of trail. Area at edge of forest, in shade. Pasture land to NE, cut area, with grass 3 to 6" high & weeds to 3-4 ft. Soil nearly everywhere damp. Small frog with buff colored dorsolateral stripe was 8" from snake. Frog about 1" long.

RCS 5120 - about 15" snout-vent - Above reddish or rust brown; transverse dark marks of light sooty; lower sides (lowermost 2 scale rows) orange to rust; ventral surface yellow with edges of gastrosteges cream to pale yellow; from about midpoint of body gastrosteges become more orange & on posterior part of body they are orange; iris rust, like dorsum.

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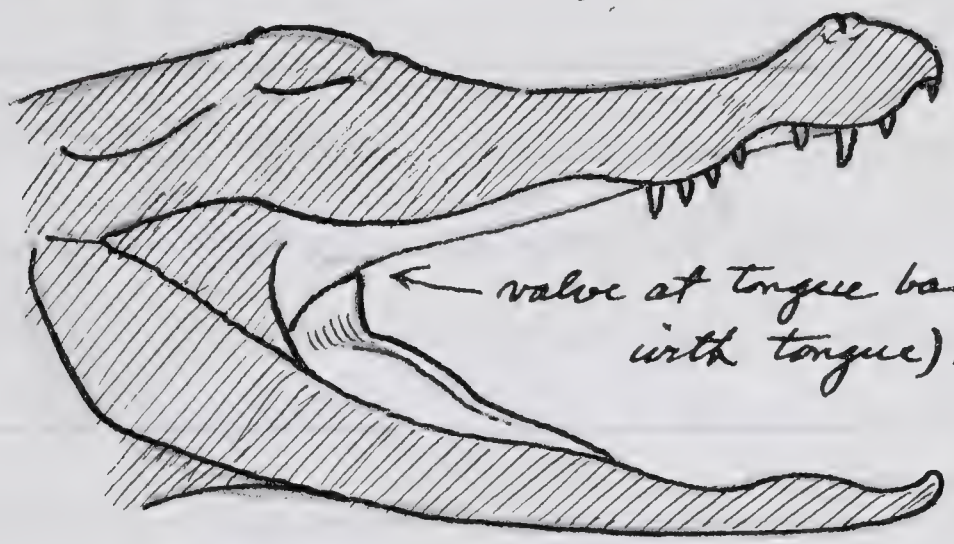
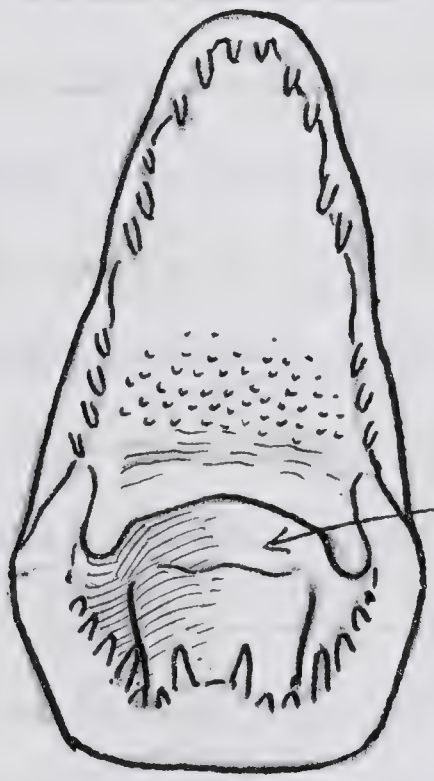
1950

Caiman

Villavieja, 1400 ft., Huila, Colombia

Nov. ~~10~~ 9 Specimen taken Nov. 9.; about 2 ½' snout-vent.





1 3/8" ~~xx~~ in diam. = mature egg = yolk quite fluid, about consistency of heavy syrup, pale yellow in color, surrounded by tough membrane.

21 eggs, all about size (1 3/8") except 2 that were 1 3/16" across. All were ovarian in position; oviducts highly fold, milk white, about 1" wide.

10 smaller eggs ½ to 3/4" across + many still smaller ones.

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Caiman fuscus

Villavieja, 1400 ft., Huila, Colombia

Nov. 10 Stomach nearly empty. Contained remains of a smooth surface, black beetle (large dytiscid?) about 1" in elytra length and many smaller fragments of what seemed to be beetle & other insect remains. There were 3 stones, 2 of them about 1" across & 1, 3/4" across. Stones round surfaced; 2 appear to be granitic.

We found this animal about 100 yds. from the road. We were headlamp-lighting for amphibians. I got an intense red eyeshine from a grass margined pool. John attempted to get close in for a shot but the animal submerged. We circled the pool and once again obtained the shine. This time John fired at a distance of about 25 ft. There was a great thrashing of the water for a few moments, then quiet, and I saw the hind foot of the animal sink slowly out of sight. We probed about with sticks and got the animal to surface. John got some twine over its snout but it was not strong enough to hold the animal well; however, on a second try the creature was gotten to the bank and John pulling and I probing with a stick, we got the animal out of the water.

Stebbins, R.
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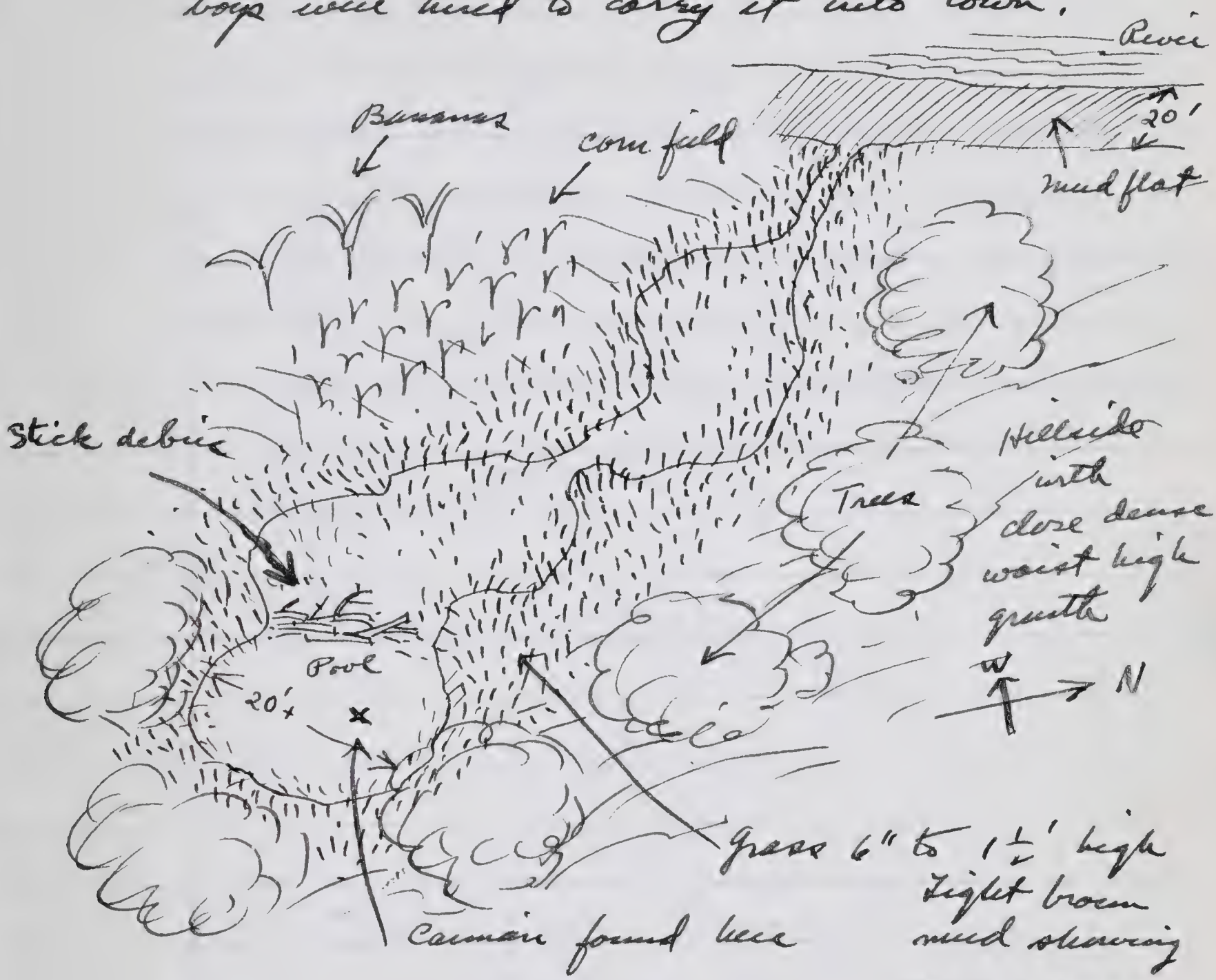
Caiman

Villavieja, 1400 ft., Huila, Colombia

Nov. 9 The animal was tied to a pole and two boys were hired to carry it into town.



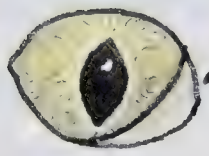
I suspect the caiman came to the small pool to deposit ~~her~~ her eggs.
Another inducement was perhaps the strength of the current and the refuse (logs, etc.) carried by the river.

Stebbins, R.
1950

Caiman

Villavicencio, 1600 ft., Meta, Colombia

Nov. 22 JRH 1592, 10 5/8" snout to posterior margin of vent — Below uniformly white with scales outlined in light gray; underside of toes sooty; dorsal surface of body olive brown with black markings; sides cream, with dark markings; dorsal surface of head brown; iris pale yellow in upper part becoming gray yellow ventrally; many small, fine, lines & flecks of dusky in iris; edge of nictitating membrane light yellow.



nictitating membrane.

Rt. eye
ant. →

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1950

Caecan

Villavicencio
~~Buenavista~~, 1600 ft., Meta, Colombia

Nov. 22 Cloaca 26°C; 8:15 p.m; water

High note of call about 1 octave and 2 or 3 notes above violin G; low note about one octave below high note. It is a nasal sound, about 1/3 to 1/2 sec. in duration. It might be syllabified "who" or ~~ha~~ "oh" or "ooo". The animal was giving about 3 calls every 2 secs. when first captured.

I give the call with lips slightly parted, with no tongue or lip movement and with nose held in fingers. The sound is grunted out.

Water down stream about 175 ft., 25°C. Some delay in getting animal's temp. It was in water.

Stebbins, R.

1950

Jacarelinga

El Mico, 41 km. S, 22 km. W San Martin, 1600 ft., Meta, Colombia

Nov. 26 About 8:30 p.m. got a ruby red eye shine from the small ~~spring~~ stream below the spring where the ranch gets its water. I fired at the eyes and then climbed a log that lay across the stream to see if I could spot my quarry. I saw the animal in water 1 ft. deep. In the light of my head lamp, I could see him making his way down stream. John had arrived and he fired through 8" of water at the retreating animal. Shortly after this I got the eye shine again among some thick clumps of broad-leaf water plants but it quickly disappeared. The two of us carefully searched the area. John at last saw the animal with just its snout projecting from beneath some submerged roots, etc. The creature moved forward and John fired at close range, about 6 ft., hitting the animal apparently in the back. It lay still pretty turned on its side. We managed to get a noose over its head and pulled it from the water. The creature wriggled its head from side to side but could move its hind quarters but little. Its back may have been injured.

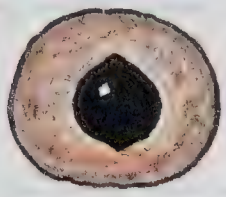
The animal was a female, 627 mm (snout-vent), 559 mm (tail) in length. I was impressed with how like a piece of submerged wood the creature appeared as it lay still following John's last shot. There was a 6" fish in its stomach, a fish with many large head shields.

Stebbins, R.
1950

Macrolarge

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 26



Rt. eye
ant. →

Stebbins, R.
1950

Vocalizations

El Mico, 41 kms. S, 22 kms. W. San Martin, 1600 ft., Meta, Colombia

Dec. 1 John brought in 2 baby caimans, each about 5-6" snout-vent. They gave the call note of the young in distress. The mouth gaped, the tongue valve was in place. The surface of the tongue toward the back of the mouth, just in front of the tongue valve, elevated with each sound. This seeming retention of expired air and apparent rescue may account for the muffled character of the sounds.

Stebbins, R.
1950

Pleurodira turtle

5 kms. S Villavicencio, 1600 ft., Meta, Colombia

Nov. 23 JRH 1604, about 3" carapace length — shell above rather uniformly brown; narrow margin of carapace pale yellow; underside of shell pale yellow with brownish yellow smudging centrally in marginals & some of plastron shields; plastron extensively clouded with brownish sooty; underside of feet & tail sooty; underside of neck & limbs gray; lower jaw cream; tentacles orange cream; head variegated light olive gray & sooty brown (larger markings); neck and upper surface limbs sooty; yellow brown between scales on upper surface distal segments of limbs; tympanum lavender; iris cream with nearly white pupillary ring; peripherally iris gray.

See John Hendrickson's notes for data on collection.

Stebbins, R.
1950

Turtle

El Mico, 41 kms. S, 22 kms. W San Martin, 1600 ft., Meta, Colombia

Nov. 25 RCS 5138, 5 7/8" carapace length — Carapace gray brown; marginals entirely yellow laterally, narrowly margined with yellow posteriorly; plastron orange yellow, with margins between shield blackish brown; limbs gray, light gray ventrally; upper & lower jaws yellow cream; tubercles on throat whitish; iris brown with metallic beige pupillary ring & peripheral flecking; sides of head & neck & under side of head cream mottled; dorsal surface head and neck blackish gray (sooty to almost black).

Found about 8:00 p.m. in water below spring about 2 blocks W of ranch house. Water 10-12" deep & 10-12 ft. wide. Turtle caught in dipnet, in beam of head lamp. Stream in jungle; grass land nearby to E. Another individual of similar size seen nearby.